Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer’s recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at http://www.systemsensor.com/appguides/. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or “smoke” from a developing fire may not reach the sensing chambers of smoke detectors because:

• Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
• Smoke particles may become “cold,” stratify, and not reach the ceiling or upper walls where detectors are located.
• Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
• Smoke particles may be drawn into air returns before reaching the detector.

The amount of “smoke” present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

• An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
• Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
• Language and instructional requirements must be clearly disseminated on any local displays.
• Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
• Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner’s responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
• In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer’s recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer’s representative. Maintenance should be scheduled as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

Limit-D2-2016
Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49°C/32-120°F and at a relative humidity ≤94%. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15-27°C/60-80°F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Precau-D1-9-2005

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n’emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

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Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

Documentation Feedback

Your feedback helps us keep our documentation up-to-date and accurate. If you have any comments or suggestions about our online Help or printed manuals, you can email us.

Please include the following information:

- Product name and version number (if applicable)
- Printed manual or online Help
- Topic Title (for online Help)
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

Send email messages to:

FireSystems.TechPubs@honeywell.com

Please note this email address is for documentation feedback only. If you have any technical issues, please contact Technical Services.
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It is imperative that the installer understand the requirements of the Authority Having Jurisdiction (AHJ) and be familiar with the standards set forth by the following regulatory agencies:

- Underwriters Laboratories/Underwriters Laboratories Canada
- National Fire Protection Association

Before proceeding, the installer should be familiar with the following documents.

**NFPA Standards**
- NFPA 72 National Fire Alarm Code
- NFPA 70 National Electrical Code
- NFPA 720 Carbon Monoxide Detection and Warning Equipment

**Underwriters Laboratories Documents:**
- UL 38 Manually Actuated Signaling Boxes
- UL 217 Smoke Detectors, Single and Multiple Station
- UL 228 Door Closers–Holders for Fire Protective Signaling Systems
- UL 268 Smoke Detectors for Fire Protective Signaling Systems
- UL 268A Smoke Detectors for Duct Applications
- UL 346 Waterflow Indicators for Fire Protective Signaling Systems
- UL 464 Audible Signaling Appliances
- UL 521 Heat Detectors for Fire Protective Signaling Systems
- UL 864 Standard for Control Units for Fire Protective Signaling Systems
- UL 1481 Power Supplies for Fire Protective Signaling Systems
- UL 1638 Visual Signaling Appliances
- UL 1971 Signaling Devices for Hearing Impaired
- UL 2017 General-Purpose Signaling Devices and Systems
- UL 2075 Standard for Gas and Vapor Detector and Sensors

**CAN/ULC Documents:**
- CAN/ULC - S524-01 Standard for Installation of Fire Alarm Systems
- CAN/ULC - S599-04 Equipment for Fire Signal Receiving Centers and Systems
- CAN/ULC - S561-03 Installation and Services for Fire Signal Receiving Centers and Systems
- CAN/ULC - S527-99 Standard for Control Units for Fire Alarm Systems

This Class (A) digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe (A) est conforme à la norme NMB-003 du Canada.

**Other:**
- Canadian Electrical Code, Part I
- EIA-232E Serial Interface Standard
- EIA-485 Serial Interface Standard
- NEC Article 250 Grounding
- NEC Article 300 Wiring Methods
- NEC Article 760 Fire Protective Signaling Systems
- Applicable Local and State Building Codes
- Requirements of the Local Authority Having Jurisdiction (LAHJ)

**Fire-Lite Documents:**
- Fire-Lite Device Compatibility Document #15384
- SLC Wiring Manual Document #51309
- Wireless Gateway Manual Document #LS10036-000FL-E
- CHG-120F Battery Charger Document #50888
- CHG-75 Battery Charger Document #51315
- IPOTS-COM POTS/IP Communicator Document #LS10184-000GE-E
- CELL-CAB-FL GSM Communicator Document #LS10186-000FL-E
- ANN-80 Product Installation Document Document #52749
- ANN-100 Product Installation Document Document #LS10205-000FL-E
- ANN-(R)LED Product Installation Document Document #50055
- ANN-I/O Product Installation Document Document #151416
- ANN-RLY Product Installation Document Document #50055
- ANN-S/PG Product Installation Document Document #151417

This product has been certified to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, 9th Edition. Operation of this product with products not tested for UL 864, 9th Edition has not been evaluated. Such operation requires the approval of the local Authority Having Jurisdiction (AHJ).
Basic System Connections

2 Programmable Relays & Fixed Trouble Relay
Non-supervised relay contacts
Contract rating:
- 2.0 amps @ 30 VDC (resistive)
- 0.5 amps @ 30 VAC (resistive)

Contacts shown below in normal condition (AC power with no alarm, trouble, or supervisory activity).

AC Fail Safe Trouble relay switches to the NO position during trouble conditions and under loss of all power.

(Factory default relay programming)

Auxiliary Trouble Input
Alarm*
Trouble
Supervision*

Notification Appliance Circuits
NAC #1 and #2 Class B or Class A (Supervised, Power-Limited) (Special application)
2.5 amps max. per circuit

Remote Synchronization Input
Supervised, Power-Limited circuits
24 VDC filtered (0.35 amp maximum), Requires a 4.7 Kohm End-of-Line Resistor

Important!
Disabling Ground Fault Detection voids UL/NFPA Class identification for circuits.
Disable Ground Fault only with the approval of the AHJ (Authority Having Jurisdiction).

Special Application
DC Power Outputs (24 VDC)
Nonresettable Power suitable for powering annunciators. Resettable Power suitable for powering smoke detectors.
24 VDC filtered, power-limited (1.0 amp maximum). Class A or Class B wiring possible.
Supervise with a power supervision relay EOLR-1

Primary ANN-BUS to Annunciators (power-limited, supervised)
Secondary ANN-BUS to Annunciators (power-limited, supervised)
SLC Loop (supervised)

Connection to the IPOTS-COM communicator card for POTS and IP reporting

Important! Disabling Ground Fault Detection voids UL/NFPA Class identification for circuits.
Disable Ground Fault only with the approval of the AHJ (Authority Having Jurisdiction).

Important! Disabling Ground Fault Detection voids UL/NFPA Class identification for circuits.
Disable Ground Fault only with the approval of the AHJ (Authority Having Jurisdiction).

Auxiliary Trouble Input
Alarm*
Trouble
Supervision*

Battery
24 VDC, supervised, nonresettable
18 AH maximum

AC Power
(Supervised, Nonpower-Limited)
120 or 240 VAC, 50/60 Hz, 3.25 amps

CAUTION! HIGH VOLTAGE

USB Port J20 for firmware updates, local programming using a personal computer and FS-Tools utility or a thumb drive

Connection to the IPOTS-COM communicator card for POTS and IP reporting
Peripheral Devices and Their Documents:

- ANN-80 LCD Text Annunciator Doc. #52749
- ANN-100 LCD Text Annunciator Doc. #LS10205-000FL-E
- ANN-RLY 10 Form-C Relay Card Doc. #53033
- ANN-I/O LED Driver Doc. #151416
- ANN-S/PG Printer Driver Doc. #151417
- ANN-(R)LED LED Display Doc. #53032

- IPOTS-COM POTS and IP Communicator Doc. #LS10184-000GE-E
- CELL-CAB-FL GSM Communicator Doc. #LS10186-000FL-E
- 4XTMF Reverse Polarity Module

- Addressable Devices and SLC Wiring Doc. #51309
  Wireless Gateway Doc. #LS10036-000FL-E

- CHG-120F Charger Doc. #50888
- CHG-75 Charger Doc. #51315
Section 1: Product Description

The Fire-Lite ES-50X is an addressable FACP (Fire Alarm Control Panel) with a pre-installed communicator card that is compact, cost effective, intelligent, and has an extensive list of powerful features. The combination of Fire-Lite’s newer series devices and legacy 300 Series devices, along with the ES-50X FACP, offer the latest in fire protection technology. The power supply and all electronics are housed in a metal cabinet, providing a complete fire control system for most applications. Optional modules, which plug into the main circuit board, are available for special functions. Available accessories include multi-technology central station communicators, LED, graphic, and LCD annunciators, reverse polarity/city box transmitter, local and remote upload/download software, and remote power expansion.

The ES-50XC is a ULC-listed Canadian version of the FACP which offers the same features as the ES-50X, but is supplied standard with a dress panel. Refer to “Canadian Option” on page 77 for a full description.

NOTE: Unless otherwise specified, the term ES-50X is used to refer to all versions of the panel.

Inventory

When ES-50X shipment is received, check that all parts have been included in shipment. The ES-50X shipment consists of one of each of the following:

- main circuit board with display
- backbox with door
- plastic bag containing screws, cables, ELRs, terminal blocks, etc.

1.1 Features and Options

- Pre-installed IPOTS-COM Ethernet IP and POTS (Plain Old Telephone Service) Central Station Communicator
- Optional CELL-MOD(C) or CELL-CAB-FL GSM Central Station Communicator over AlarmNet
- LiteSpeed™ polling protocol for faster SLC response time
- SLC operates up to 10,000 ft. (3,000 m) in LiteSpeed mode with twisted, unshielded wire (refer to “Wire Requirements” on page 140)
- Single addressable SLC loop which meets NFPA Class A, Class B, and Class X requirements
- 50 addressable device capacity (any combination of addressable detectors and addressable control/relay/monitor modules totaling 50)
- 50 software zones
- Two (2) Class B or two (2) Class A NAC (Notification Appliance Circuits) circuits - special application power
- 3.0 amps total 24 VDC output circuit current in alarm condition
- Four programmable function keys for ease of maintenance
- Two programmable relay outputs and one fixed trouble relay
- Synchronization output for remote power supply applications (special application)
- Built-in Programmer
- 80-character LCD display (backlit)
- Real-time clock/calendar with daylight savings time control
- History file with 1,000 event capacity
- Addressable sounder base compatibility
- Multi-criteria detector (smoke, heat, CO) with programmable response
- Advanced fire technology features:
  - Automatic drift compensation
  - Maintenance alert
  - Detector sensitivity test capability (NFPA 72 compliant)
  - Automatic device type-code verification
  - Point trouble identification
- Waterflow selection per module point
- Alarm verification selection per detector point
- Walktest, silent or audible
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant)
- Silence inhibit timer option per NAC
- Autosilence timer option per NAC
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability
- Selectable strobe synchronization per NAC
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or ANN-80/ANN-100 Remote annunciator
- Auto-program (learn mode) reduces installation time. Reports two devices set to the same address
- Password and key-protected nonvolatile memory
- User programmable password
- Fully programmable from local keypad
- Optional FS-Tools programming utility for local or remote Upload/Download of programming and data (available for download from www.firelite.com)
Specifications

Product Description

• Compatible with Fire-Lite’s devices in LiteSpeed and CLIP mode (refer to SLC Wiring Manual for a list of compatible addressable devices)
• Compatible with legacy Fire-Lite 300 Series devices in CLIP mode only (refer to the SLC Wiring Manual for a list of compatible addressable devices)
• Optional 4XTMF module (conventional reverse polarity/city box transmitter)
• ANN-BUS for connection to following optional modules:
  ✓ ANN-80 Remote Annunciator (UL applications only)
  ✓ ANN-100 (FM and Canadian applications only)
  ✓ ANN-I/O LED Driver
  ✓ ANN-S/PG Printer Module
  ✓ ANN-RLY Form-C Relay Module
  ✓ ANN-LED Annunciator Module announces alarm, trouble and supervisory (required for Canada and emergency signaling)
  ✓ ANN-RLED Annunciator Module announces alarms only

1.2 Specifications

Refer to Illustration on page 10 for terminal locations and connections.

AC Power - TB13

Operates in either 120 or 240 VAC, 50/60 Hz, 3.25 amps, auto-sensing. No switch or jumper required.

Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation

Battery (Sealed Lead Acid Only) - J15

Maximum Charging Circuit: Normal Flat Charge – 27.6 VDC @ 1.5 amps

Maximum Battery Charger Capacity: 18 Amp Hour (FACP cabinet holds maximum of two 18 Amp Hour batteries. The BB-26 Battery Box holds two 26 Amp Hour batteries and the CHG-75. For greater than 26 Amp Hour up to 120 Amp Hour batteries, use the CHG-75 or CHG-120F Battery Charger and BB-55F Battery Box).

Minimum Battery Size: 7 Amp Hour

Note: Refer to the programming section to disable the FACP battery charger when using an external battery charger.

Communication Loop - TB12

24 VDC nominal, 27.6 VDC maximum

Maximum length - refer to “Wire Requirements” on page 140

Maximum loop current is 200 mA (short circuit) or 100 mA (normal)

Maximum loop resistance is 40 ohms

Supervised and power-limited circuit

Refer to SLC Wiring manual for wiring information

Notification Appliance Circuits/Special Application (Auxiliary) Power - TB4 & TB5

Two (2) Class B NAC circuits or two (2) Class A circuits

Special Application, filtered power

Power-limited circuitry

NAC wiring requirements refer to “NAC Wiring” on page 141

Nominal operating voltage: 24 VDC

Current-limit: fuseless, electronic, power-limited circuitry

Maximum signaling current per circuit: 2.5 amps special application, 250 mA regulated for NACs (see Figure 1.1 on page 14)

Maximum signaling current per circuit: 1.0 amp for auxiliary power

End-of-Line Resistor: 4.7 kΩ, ½ watt (P/N 71252 UL listed) required for each circuit; system capable of 1.9 kΩ - 22 kΩ ELR range.

Refer to the Device Compatibility Document for listed compatible devices

A circuit programmed for auxiliary power does not support notification appliances.

Two Programmable Relays and One Fixed Trouble Relay - TB1, TB2, & TB3

Contact rating: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive)

Form-C relays

Refer to Figure 2.6 on page 25 for information on power-limited relay circuit wiring

Remote Sync Output - TB8

Remote power supply synchronization output

24 VDC nominal special application power

Maximum current is 350 mA

End-of-Line Resistor: 4.7kΩ

Output linked to NAC 1 control

Supervised and power-limited circuit

Programmable Class A or Class B wiring

Secondary ANN-BUS - TB10

ANN-BUS annunciator connector, Terminal 1 (+/A) and Terminal 2 (-/B)

Annunciators require non-resettable power
Primary ANN-BUS - TB9

Class A or Class B wiring
ANN-BUS annunciator connector, Terminal 1 (+/A) and Terminal 2 (-/B)
Class A wiring uses Terminal 3 (+/A Return) and Terminal 4 (-/B Return)
Annunciators require non-resettable power

The following figure illustrates the maximum current that is possible for each major panel output circuit and the total current available from the FACP.

Refer to the battery calculations section for additional information.

Figure 1.1  Current Availability

1.3 Controls and Indicators

LCD Display

The FACP uses an 80-character (4 lines x 20 characters) high viewing angle LCD display. The display includes a long life LED backlight that remains illuminated. If AC power is lost and the system is not in alarm, the LED backlight will turn off to conserve batteries.

Key Panel

Mounted on the main circuit board, the key panel includes a window for the LCD display and LED indicators as listed below. The key panel, which is visible with the cabinet door closed, has 30 keys, including a 16 key alphanumeric pad similar to a telephone keypad.
LED Indicators
LED indicators are provided to annunciate the following conditions:
• Fire Alarm (red)
• CO Alarm (red)
• AC Power (green)
• Supervisory (yellow)
• Trouble (yellow)
• Ground fault (yellow)
• Battery fault (yellow)
• Disabled (yellow)
• Maintenance (yellow)
• Communication (yellow)
• Alarm Silenced (yellow)
• F1-F4 Function Keys (yellow)

Function keys:
• Acknowledge
• Alarm Silence
• Drill
• Reset (lamp test)
• four (4) programmable function keys

Service/program keys:
• Keys labeled 1 to 9
• * key
• # key
• 0 (recall) key
• First Event and scroll keys
• Last Event and scroll keys
• Clear key
• Escape key
• Two cursor keys (left and right)
• Menu/Enter key

Local Piezo Sounder
A piezo sounder provides separate and distinct pulse rates for alarm, trouble and supervisory conditions.

1.4 Components

Main Circuit Board
The main circuit board contains the system’s CPU, power supply, other primary components and wiring interface connectors. The 4XTMF option module plugs in and is mounted to the main circuit board.

IPOTS-COM Communicator Card
The pre-installed IP/POTS communicator card transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote programming or interrogation of the control panel using the FS-Tools Upload/Download utility and a hard-wired ethernet IP connection. Any personal computer with Windows® 7 or greater, 32 or 64 bit, and FS-Tools software may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status and system voltages. See Section 6 on page 120 for more information.

The IPOTS-COM digital communicator provides the following POTS functions:
• Line Seizure: takes control of the phone lines disconnecting any premises phones
• Off/On Hook: performs on and off-hook status to the phone lines
• Listen for dial tone: 440 Hz tone typical in most networks
• Dialing the Central Station(s) number: default is Touch-Tone®, programmable to rotary
• For tone burst or touchtone type formats: discern proper Ack and Kissoff tone(s). The frequency and time duration of the tone(s) varies with the transmission format. The control panel will adjust accordingly.
• Communicate in the following formats:
  ✓ Ademco Contact ID
  ✓ SIA DCS 8
  ✓ SIA DCS 20

Cabinet
The ES-50X backbox provides space for two batteries (up to 18 Amp Hour). Ample knockouts are provided for system wiring. Also available is an optional dress panel (DP-ES-R), which mounts to the inside of the cabinet (required by ULC for Canadian installations).
Batteries
The ES-50X cabinet provides space for two batteries (up to 18 Amp Hour). Batteries larger than 18 Amp Hour require an external charger such as the CHG-75 or CHG-120F and a UL listed battery box such as the BB-26 or BB-55F. Batteries must be ordered separately.

1.4.1 Intelligent Addressable Detectors
Intelligent, addressable detectors provide information to the control panel on an SLC Signaling Line Circuit (refer to the SLC Wiring Manual for detailed information on device installation, wiring and operation). This allows the control panel to continually process the information to determine the status (alarm, trouble, maintenance or normal) of each detector. Each detector responds to an SLC address that is set in the detector head using built-in rotary decimal switches. The maximum address cannot exceed address 50. Note that a blinking LED on an intelligent detector indicates communication between the detector and the control panel.

These devices (350 Series or newer) can operate in CLIP mode (Classic Loop Interface Protocol) or LiteSpeed mode to provide a quicker response. They are also compatible with older 300 Series devices. If a mix of old and new series devices are installed on the same loop, the FACP must be programmed to operate in CLIP mode. Refer to the SLC Wiring Manual for a list of compatible addressable detectors or the Device Compatibility Document for conventional detectors.

1.4.2 Intelligent Addressable Modules
Control Modules and Monitor Modules provide an interface between the control panel and conventional notification and initiating devices. Each module can be set to respond to an address with built-in rotary switches. The maximum address cannot exceed address 50. Note that a blinking LED on an addressable module indicates communication between the module and the control panel.

These devices (i.e., MMF-300, MDF-300, MMF-301, MMF-302, CMF-300, CRF-300) can operate in CLIP mode (Classic Loop Interface Protocol) or LiteSpeed mode to provide a quicker response. They are also compatible with older 300 series devices. If a mix of old and new series devices are installed on the same loop, the FACP must be programmed to operate in CLIP mode. Refer to the SLC Wiring Manual for a list of compatible addressable modules. Refer to the Device Compatibility Document for a list of approved conventional notification and initiating devices.

1.4.3 Addressable Device Accessories
End-of-Line Resistor Assembly
The End-of-Line resistors are included with each module. Refer to the specific module documentation for specific information.

Power Supervision Relay
The UL listed End-of-Line power supervision relay is used to supervise the power to 4-wire smoke detectors and notification appliances.

EOL-C(R/W) Mounting Plate
The EOL-CR (red) and EOL-CW (white) are single End-of-Line resistor plates which are required for use in Canada. An ELR, which is supplied with each module and fire alarm control panel, is mounted to the EOL-C(R/W) plate. Resistors mounted to the plate can be used for the supervision of a monitor and control module circuit.

1.5 Optional Modules
The ES-50X main circuit board includes option module connectors for the following modules:

CELL-MOD(C)/CELL-CAB-FL(C)
Optional GSM communicator card for central station reporting. It mounts in its own plastic or metal enclosure. Use of the CELL-MOD(C)/CELL-CAB-FL(C) requires the IPOTS-COM communicator. Connections are made from the CELL-MOD/CELL-CAB to the IPOTS-COM.

4XTMF Transmitter Module
The 4XTMF provides a supervised output for local energy municipal box transmitter, alarm and trouble reverse polarity. It includes a disable switch and disable trouble LED. A jumper on the module is used to select an option which allows the reverse polarity circuit to open with a system trouble condition if no alarm condition exists. The module plugs into connectors J5 and J6 which are located near the right edge the main circuit board. When the 4XTMF module is installed, Jumper JP3, on the main circuit board, must be cut to allow supervision of the module.

1.6 Accessories
1.6.1 FS-Tools Programming Utility
The FS-Tools Programming Utility can be used to locally or remotely program the FACP from most Windows® compatible computers (PC), running Windows 7 or newer, 32 or 64 bit. The FACP program files can also be created and stored on the PC for future download to the control panel. FS-Tools can be downloaded from www.firelite.com. A standard USB cable with male-A to male-A connectors, which must be purchased separately, is required for local connection of the PC to the USB port J20 on the FACP main circuit board. Remote programming requires that the PC have a GSM or ethernet connection.
FS-Tools also provides the ability to create panel program files on a USB flash drive. The drive can then be plugged into USB port J20 on the FACP main circuit board.

**Important:** Remote modification of FACP programming requires that the panel be enabled for remote download (refer to “FS-Tools Upload/Download” on page 120). Remote interrogation of panel programming, history logs, detector status, etc., is possible without enabling the remote download option.

### 1.6.2 Dress Panel

An optional dress panel, DP-ES-R is available for the ES-50X (required by ULC for Canadian installations). The dress panel restricts access to the system wiring while allowing access to the key panel. A ground strap must be connected between the stud on the inside of the dress panel and the ground stud in the backbox. The dress panel mounts to the backbox with two (2) #4 screws and washers or two (2) #6 screws. The ES-50XC is supplied standard with a dress panel.

![Dress Panel Diagram](image)

### 1.6.3 Trim Ring

An optional Trim Ring (P/N TR-CE) is available for the FACP backbox. The Trim Ring adds 1.5” of wall coverage around the backbox, concealing hardware and providing a finished appearance for a semi-flush mounted panel.

### 1.6.4 Battery Box

**BB-26**

The BB-26 battery box may be used to house up to two 26 AH batteries and the CHG-75 Battery Charger.

**BB-55F**

The BB-55F battery box may be used to house two 26 AH batteries, two 60 AH batteries or one 100 AH battery. When the CHG-120F is mounted in the BB-55F, two 26 AH or one 60 AH battery may also be housed in the battery box.

### 1.6.5 Battery Charger

**CHG-75 Battery Charger**

The CHG-75 is capable of charging up to 75 AH lead-acid batteries with the ES-50X FACP. The FACP battery charger must be disabled, by removing jumper JP5, when using the CHG-75. The charger and up to 26 AH batteries can be housed in the BB-26 battery box. Larger batteries and the charger can be housed in the BB-55F battery box which can be mounted up to 20 feet away from the control panel. Refer to the CHG-75 Manual for additional information.

**CHG-120F Battery Charger**

The CHG-120F is capable of charging up to 120 AH lead-acid batteries with the ES-50X FACP. The FACP battery charger must be disabled, by removing jumper JP5, when using the CHG-120F. The batteries and charger can be housed in the BB-55F battery box which can be mounted up to 20 feet away from the control panel. Note that when using the BB-55F for housing the charger and batteries greater than 26AH, multiple BB-55Fs are required. Refer to the CHG-120F Manual for additional information.

### 1.6.6 W-GATE Wireless Gateway

The W-GATE Wireless Gateway acts as a bridge between a group of wireless fire devices and a LiteSpeed SLC loop on the ES-50X. It is powered by the SLC loop or by a regulated, external 24VDC UL-listed power supply evaluated for life safety. Available wireless devices include a photo detector, a photo/heat detector, a fixed-temperature heat detector, a rate-of-rise heat detector, a monitor module, and a relay module. For details about wireless devices, system setup, and operation, see the SWIFT® Smart Wireless Integrated Fire Technology Instruction Manual #LS10036-000FL-E.

**NOTE:** The W-GATE, as part of the wireless network, has been tested for compliance with the Federal Communications Commission (FCC) requirements of the United States Government. It has not been evaluated for use outside the USA. Use of this system outside the USA is subject to local laws and rules to which this product may not conform. It is the sole responsibility of the user to determine if this product may be legally used outside the USA.
1.6.7 ANN-BUS Annunciators/Modules

WARNING: RISK OF ELECTRICAL SHOCK AND EQUIPMENT DAMAGE
DISCONNECT ALL SOURCES OF POWER (AC AND DC) BEFORE INSTALLING OR REMOVING ANY MODULES OR WIRING.

Guidelines

- A variety of optional annunciation devices can be connected to an ANN-BUS communication circuit. ANN Series devices can be connected to the primary communication circuit (EIA-485) terminals on TB9. A secondary communication circuit for these devices is available at TB8. Each ANN-BUS communication circuit supports up to eight (8) annunciators. Compatible devices include the following:
  - ANN-80 LCD Annunciator (UL applications only)
  - ANN-100 LCD Annunciator (FM and Canadian applications only)
  - ANN-S/PG Serial/Parallel Printer Interface Module
  - ANN-I/O LED Driver Module
  - ANN-LED Annunciator Module (alarm, trouble, supervisory LEDs)
  - ANN-RLED Annunciator Module (red alarm LEDs only)
  - ANN-RLY Relay Module (can be mounted in the supplied FACP chassis)
- When operating two ANN-BUS circuits, only one ANN-S/PG Printer module can be used in the system.
- The panel is capable of operating a primary ANN-BUS (TB9) and a secondary ANN-BUS (TB10) simultaneously.

ANN-80 and ANN-100 Remote Fire Annunciators

The ANN-80 and ANN-100 Annunciators are 80 character, backlit, LCD remote fire annunciators. They mimic the display on the control panel and will annunciate device type, point alarm, trouble or supervisory condition, zone assignment plus any custom alpha labels programmed into the FACP. The annunciators also provide system status LEDs to display AC Power, Alarm, Trouble, Supervisory and Alarm Silenced conditions. Additionally, the annunciators are capable of remotely performing critical system functions such as Acknowledge, Silence, Reset and Drill. Communication between the ANN-80/ANN-100 and the FACP is accomplished over a two wire RS-485 serial interface employing the ANN-BUS communication format. The devices are powered, via two additional wires, from either the host FACP or remote UL-listed, filtered, regulated power supply.

The function buttons, keyswitch and piezo sounder may be individually enabled and disabled through the FACP software. Refer to “ANN-80/100 Options” on page 95 for a description of this feature and programming information.

Note that if the keyswitch is enabled and remains in the unlocked position for more than two minutes without any buttons being pressed on the annunciator, a trouble indication will be annunciated.

ANN-S/PG Serial/Parallel Interface Module

The ANN-S/PG Serial/Parallel Interface module allows the connection of a remote serial or parallel printer to the FACP for a real-time log of system events, detector status reports and event history. The module is provided with a plastic enclosure for surface mounting.

ANN-I/O LED Driver Module

The ANN-I/O is an LED driver module that can be used in a wide variety of applications, including as an interface with most customized graphic annunciators. The ANN-I/O can drive up to 40 LEDs. The module is provided with a plastic wall mount.

ANN-LED Annunciator Module

The ANN-LED and ANN-RLED annunciator modules provide LED annunciation of general system faults and input zones/points when used with a compatible FACP. The ANN-LED module provides alarm (red), trouble (yellow) and supervisory (yellow) indication for up to ten input zones or addressable points. The ANN-RLED provides alarm (red) indication for up to 30 input zones or addressable points. Multiple ANN-(R)LED modules may be used for full system coverage.

ANN-RLY Annunciator Module

The ANN-RLY relay module provides 10 programmable Form-C relays when used with a compatible FACP.
1.7 Getting Started

The following is a brief summary of the minimal steps involved in bringing an ES-50X on-line:

- Install Backbox and Main Circuit Board (refer to “Mounting the Backbox” on page 21)
- Address and Install Intelligent Devices (refer to the SLC Wiring Manual)
- Enter Autoprogramming (refer to “Autoprogram” on page 50)
- Resolve Programming Conflicts
- Go to Point Program to Enter Specific Data (refer to “Point Program” on page 51). Use the right and left arrow keys to navigate between devices.

1.8 Telephone Requirements and Warnings

1.8.1 Telephone Circuitry

- Ringer Equivalence Number (REN) = 0.3A
- AC Impedance: 10.0 Mega Ohm
- Complies with FCC Part 68
- Mates with RJ31X Male Connector
- Supervision Threshold: loss of phone line voltage for 2 minutes

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

Before connecting the control panel to the public switched telephone network, the installation of two RJ31X jacks is necessary. If trouble is experienced with this equipment, for repair or warranty information, please contact:

- Manufacturer: Honeywell International, Inc.
  One Fire-Lite Place
  Northford, CT 06472
  (203) 484-7161

- Product Model Number: ES-50X
- FCC Registration Number: US:1W6AL03AEVOLX
- Ringer Equivalence: 0.3A

NOTE: This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the inside of the FACP door is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

Alarm dialing equipment must be able to seize the telephone line and place a call in an emergency situation. It must be able to do this even if other equipment (telephone, answering system, computer modem, etc.) already has the telephone line in use. To do so, alarm dialing equipment must be connected to a properly installed RJ31X jack that is electrically in series with and ahead of all other equipment attached to the same telephone line. If there are any questions concerning these instructions, consult the telephone company or a qualified installer about installing the RJ31X jack and alarm dialing equipment. Refer to “CELL-MOD(C)/CELL-CAB-FL” on page 30 for an illustration of the proper installation of this equipment.

IMPORTANT! The DACT must not be used to dial a phone number that is call-forwarded.

1.8.2 Telephone Company Rights and Warnings

The telephone company, under certain circumstances, may temporarily discontinue services and/or make changes in its facilities, services, equipment or procedures which may affect the operation of this control panel. However, the telephone company is required to give advance notice of such changes or interruptions.

If the control panel causes harm to the telephone network, the telephone company reserves the right to temporarily discontinue service. Advance notification will be provided except in cases when advance notice is not practical. In such cases, notification will be provided as soon as possible. The opportunity will be given to correct any problems and to file a complaint with the FCC if you believe it is necessary.

DO NOT CONNECT THIS PRODUCT TO COIN TELEPHONE, GROUND START, OR PARTY LINE SERVICES.

When the control panel activates, premise phones will be disconnected.

Two separate phone lines are required. Do not connect both telephone interfaces to the same telephone line.

The control panel must be connected to the public switched telephone network upstream (as first device) of any private telephone system at the protected premises.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. This equipment is designed to be connected to the telephone network or premises wiring using a compliant RJ31X male modular plug and compatible modular jack that is also compliant.
1.8.3 For Canadian Applications

The following is excerpted from CP-01 Issue 5:

NOTICE: The Industry Canada (IC) label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the users’s satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspections authority, or electrician.

“The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the REN of all devices does not exceed 5.”

DOC Compliance - “This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.”

Representative: NOTIFIER/FIRE-LITE, CANADA
10 Whitmore Road
Woodbridge, Ontario L4L 7Z4
Phone: (905) 856-8733
FAX: (905) 856-9687

IC Certificate Number: 2132A-EVOLX
Ringer Equivalence Number (REN): 0.3A
Section 2: Installation

The cabinet may be either semi-flush or surface mounted. The cabinet mounts using two key slots and two 0.250" (6.35 mm) diameter holes located in the backbox. The key slots are located at the top of the backbox and the two securing holes at the bottom. Carefully unpack the system and check for shipping damage. Mount the cabinet in a clean, dry, vibration-free area where extreme temperatures are not encountered. The area should be readily accessible with sufficient room to easily install and maintain the panel. Locate the top of the cabinet approximately 5 feet (1.5 m) above the floor with the hinge mounting on the left. Determine the number of conductors required for the devices to be installed. Sufficient knockouts are provided for wiring convenience. Select the appropriate knockout(s) and pull the conductors into the box. All wiring should be in accordance with the National and/or Local codes for fire alarm systems.

2.1 Mounting the Backbox

**CAUTION: STATIC SENSITIVE COMPONENTS**

THE CIRCUIT BOARD CONTAINS STATIC-SENSITIVE COMPONENTS. ALWAYS GROUND YOURSELF WITH A PROPER WRIST STRAP BEFORE HANDLING ANY BOARDS SO THAT STATIC CHARGES ARE REMOVED FROM THE BODY. USE STATIC SUPPRESSIVE PACKAGING TO PROTECT ELECTRONIC ASSEMBLIES.

To prevent damage to the circuit board and to facilitate backbox mounting, the chassis with main circuit board can be easily removed. Loosen the two 3/8" nuts securing the top flanges of the chassis, then slide the chassis up to free it from the lower tabs. Place the chassis assembly in a safe location until it can be reinstalled in the backbox.

1. Mark and pre-drill hole in the wall for the center top keyhole mounting bolt using the dimensions illustrated in Figure 2.2 on page 22.
2. Install center top fastener in the wall with the screw head protruding.
3. Place backbox over the top screw, level and secure.
4. Mark and drill the left and right upper and lower mounting holes.
   *Note: Outer holes (closest to sidewall) are used for 16" O.C. stud mounting.*
5. Install remaining fasteners and tighten.
6. When the location is dry and free of construction dust, install the chassis/circuit board assembly.
7. Mount the chassis to the backbox by aligning the two mounting tabs with the slots in the backbox, then position the two mounting hole tabs over the studs with nuts located in the upper portion of the backbox.
8. Slide the tabs located on the bottom of the chassis into the mounting slots in the backbox by pressing the chassis down.
9. Secure the chassis to the backbox by tightening the two mounting nuts (#10-32) at the top, and to ensure proper grounding, use a 3/8" nut driver or socket.
10. If the main circuit board is not already attached to the chassis, install it by positioning the ten mounting holes over the studs on the chassis and secure with the supplied screws.

![Figure 2.1 ES-50X Chassis Removal and Installation](es50chassisinbox.wmf)
Semi-Flush Mounting
Do not recess box more than 3.875" into wall to avoid covering venting holes on top of box.

Figure 2.2 ES-50X Cabinet Mounting
An optional Trim Ring (P/N TR-CE-) is also available for semi-flush mount installations.
2.2 Power

**WARNING: RISK OF EQUIPMENT DAMAGE AND PERSONAL INJURY**

SEVERAL DIFFERENT SOURCES OF POWER CAN BE CONNECTED TO THIS PANEL. DISCONNECT ALL SOURCES OF POWER BEFORE SERVICING. THE PANEL AND ASSOCIATED EQUIPMENT MAY BE DAMAGED BY REMOVING AND/OR INSERTING CARDS, MODULES OR INTERCONNECTING CABLES WHILE THIS UNIT IS ENERGIZED.

### 2.2.1 AC Power and Earth Ground Connection

Primary power required for the FACP is either 120 or 240 VAC, 50/60 Hz, 3.25 amps. The FACP will auto-detect the voltage used. No special switch or jumper is required to select AC power. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Code (NEC) and/or local codes. Use 14 AWG (2.00 mm²) or larger wire with 600 volt insulation rating. Make certain that the AC mains circuit breaker is off before wiring any connections between the mains and the control panel. Connect wiring from the AC mains to TB13 on the FACP, being careful to observe proper connections.

Remove the two keps nuts from the grounding stud in the backbox. Connect the incoming earth ground wire to supplied cable #71073 with a wire nut. Position the ring terminal end over the grounding stud. Secure with one of the keps nuts. Place the ring terminal from the other supplied ground cable #71073 over the ground stud and secure with the second keps nut. Wire the ground cable to the bottom position of TB11. Refer to Figure 2.1 on page 21 for location of the stud. Ensure that the ground for AC mains is the first cable installed, closest to the backbox. This connection is vital in reducing the panel’s susceptibility to transients generated by lightning and electrostatic discharge. Apply AC power to the panel only after the system is completely installed and visually checked. **Note that AC power must be applied to the panel before installing the battery interconnect cable (refer to the following section).**

![Figure 2.4 Earth Ground Connection](image-url)

### 2.2.2 Battery Power

The batteries must be sealed lead acid type. Before connecting the batteries to the FACP, make certain that the interconnect cable between the batteries is not connected. Do not connect the interconnect cable until the system is completely installed. Observe polarity when connecting the batteries. Connect the battery cable to J9 on the main circuit board. Refer to “Power Supply Calculations” on page 126, for calculation of the correct battery rating.

**WARNING: RISK OF PERSONAL INJURY**

BATTERY CONTAINS SULFURIC ACID WHICH CAN CAUSE SEVERE BURNS TO THE SKIN AND EYES AND CAN DESTROY FABRICS. IF CONTACT IS MADE WITH SULFURIC ACID, IMMEDIATELY FLUSH THE SKIN OR EYES WITH WATER FOR 15 MINUTES AND SEEK IMMEDIATE MEDICAL ATTENTION.
2.2.3 Special Application DC Power Output Connection

All Special Application DC power outputs are power-limited (refer to “UL Power-limited Wiring Requirements” on page 28).

![Diagram of Special Application Power Outputs - 24 VDC](image)

2.3 Relays

The FACP provides two programmable Form-C relays and one fixed fail-safe Form-C trouble relay. Note that relay connections may be power-limited or nonpower-limited, provided that 0.25” spacing is maintained between conductors of power-limited and nonpower-limited circuits. Refer “UL Power-limited Wiring Requirements” on page 28.

![Relay Terminals](image)

Note that the programmable relay labeled as Relay 1 is factory default programmed as Alarm and programmable Relay 3 is factory default programmed as Supervisory. The relay labeled Relay 2 is fixed as a Trouble relay and cannot be changed. It is a fail-safe relay which will transfer on any trouble or total power failure.

2.4 Notification Appliance Circuits

The control panel provides two Class B or four Class A NACs (Notification Appliance Circuits). Each circuit is capable of 2.5 amps of current. Total current in alarm for all external devices cannot exceed 6.0 amps (refer to “Calculating the System Current Load” on page 126). Use UL listed 24 VDC notification appliances only. Circuits are supervised and power-limited. Refer to the Device Compatibility Document for a listing of compatible notification appliances. The NACs, which are located on the main circuit board, may be expanded via the FCPS Series field charger/power supplies.

The following sections describe the configuration and wiring of Class B and Class A Notification Appliance Circuits on the ES-50X main circuit board.
2.4.1 Class B NAC Wiring

2 Class B Notification Appliance Circuits, supervised and power-limited - 4.7 kΩ, ½ watt P/N:71252 UL listed

![Diagram of Class B NAC Wiring]

Figure 2.7 NAC Class B Wiring

2.4.2 Class A NAC Wiring

2 Class A Notification Appliance Circuits, supervised and power-limited

![Diagram of Class A NAC Wiring]

Figure 2.8 NAC Class A Wiring
2.5 Remote Synchronization Output

Synchronization is a feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. This is particularly critical when activating strobes which must be synchronized to avoid random activation and a potential hazard to individuals. Devices connected directly to the control panel’s NACs can be synchronized as described in “Type” on page 74.

Notification appliances connected to FCPS NAC power supplies require synchronization with the FACP’s devices. This can be accomplished by connecting the Remote Synchronization Output from TB8 of the ES-50X to the sync input of the FCPS-24FS6/8 Power Supply. The 24 VDC signal from TB8 follows, that is mimics, the signal on NAC1. This allows the devices connected to the power supply to be synchronized with the devices connected to NAC1 on the FACP.

The Remote Synchronization Output is power-limited and supervised (refer to “UL Power-limited Wiring Requirements” on page 28) and can be wired in Class B or Class A. A 4.7 KΩ ELR resistor must be connected to the end of the wiring at the remote power supply for Class B wiring. Supervision of the remote synchronization is automatically enabled when the remote sync output is enabled. Supervision will be disabled if the output is disabled. For more information on enabling the remote sync output, refer to page 101.

![Figure 2.9 Remote Sync Output](image-url)
2.6 UL Power-limited Wiring Requirements

Power-limited and nonpower-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25” (6.35 mm) away from any nonpower-limited circuit wiring and nonpower-limited circuit wiring must enter and exit the cabinet through different knockouts and/or conduits. When connecting the ground cables, be sure that the AC mains ground is the first one installed, closest to the backbox. A typical wiring diagram for the ES-50X is shown below.

![Typical UL Power-limited Wiring Requirements Diagram](image-url)

**Figure 2.10 Typical UL Power-limited Wiring Requirements**
2.7 IPOTS-COM Communicator

Two independent telephone lines can be connected to the control panel via the IPOTS-COM Phone/IP Communication Module. Telephone line control/command is made possible via double line seizure as well as usage of an RJ31X style interconnection. Note that it is critical that the IPOTS-COM Digital Communicator be located as the first device on the incoming telephone circuit to properly function. Important! The IPOTS-COM must not be used to dial a phone number that is call-forwarded.

Important! The IPOTS-COM must not be used to dial a phone number that is call-forwarded.

Wiring

Connection and wiring of two phone lines is required as shown below.

Dip Switches

There are two configurable dip switches on the IPOTS-COM communicator.

- SW2: 6-position dip switch- FUTURE USE- No configuration necessary.
- SW3: 2-position dip switch- Factory Settings- Do not change unless instructed to do so by Honeywell.
2.8 Optional Module Installation

WARNING: RISK OF ELECTRIC SHOCK AND EQUIPMENT DAMAGE
DISCONNECT ALL SOURCES OF POWER (AC AND DC) BEFORE INSTALLING OR REMOVING ANY MODULES OR WIRING.

2.8.1 CELL-MOD(C)/CELL-CAB-FL

The CELL-MOD(C)/CELL-CAB-FL offers an optional GSM communicator card for central station reporting. It mounts in its own plastic or metal enclosure. Use of the CELL-MOD(C)/CELL-CAB-FL requires the IPOTS-COM communicator.

Installation

Install the CELL-CAB-FL as described in the Product Installation Document #LS10186-000FL-E and the CELL-MOD(C) as described in #LS10182-000GE-E.

Wiring

Connections are made from TB2 on the IPOTS-COM board to the to terminal on the GSM card as shown below.

---

2.8.2 4XTMF Transmitter Module Installation

The 4XTMF provides a supervised output for a local energy municipal box transmitter in addition to alarm and trouble reverse polarity. A jumper option allows the reverse polarity circuit to open with a system trouble condition if no alarm condition exists. A disable switch allows disabling of the transmitter output during testing to prevent accidental calling of the monitoring service.

Local Energy Municipal Box Service (NFPA 72 Auxiliary Fire Alarm Systems):
- Supervisory Current: 5.0 mA
- Trip Current: 350 mA (subtracted from notification appliance power)
- Coil Voltage: 3.65 VDC
- Maximum Coil Resistance: 14.6 ohms
- Maximum allowable wire resistance between panel and trip coil: 3 ohms
- Municipal Box wiring can leave the building

Remote Station Service (NFPA 72 Remote Station Fire Alarm Systems) - Intended for connection to a polarity reversal circuit or a Remote Station receiving unit having compatible ratings:
- Maximum load for each circuit: 10 mA
- Reverse polarity output voltage: 24 VDC
- Remote Alarm and Remote Trouble wiring can leave the building

Before installing the module, place the disconnect switch to the right (disconnect) position to prevent accidental activation of the municipal box. Note that a Disconnect LED will illuminate after the module is installed in the ES-50X. In addition, the System Trouble LED will turn on to indicate the Disconnect condition.
Optional Module Installation

The following steps must be followed when installing the 4XTMF module:

1. Remove all power (Primary and Secondary) from the FACP before installing 4XTMF.
2. Carefully plug the connectors on the 4XTMF module into connectors J12 and J13 on the ES-50X main circuit board, being careful not to bend any pins.
3. Secure 4XTMF module to standoffs with supplied screws.
4. Slide SW2 on the ES-50X main circuit board to the down position.
5. Enable 4XTMF supervision in user programming. Refer to “4XTMF Supervision” on page 78.
6. Reapply power to the FACP.
7. For proper 4XTMF operation, the output relays must be programmed for the factory default settings: Alarm Relay 1, Trouble Relay 2 and Supervisory Relay 3.
8. When the installation has been complete, enable the 4XTMF module by sliding the disconnect switch to the left.
9. Test system for proper operation.

Note: The 4XTMF Module is not directly suitable for transmitting a reverse polarity supervisory signal. For applications using reverse polarity of a supervisory signal, refer to “FACP with Keltron” on page 153.

* Wiring from these terminals can exit the protected premises. Dummy load terminals 6 and 7 (4.7kΩ, ¼ watt resistor) if Municipal Box is not connected.

Figure 2.15 4XTMF Transmitter Module

The polarities are shown for module activation.

Remote Alarm (power-limited)*
Remote Trouble (power-limited)*
No connection
Municipal Box (nonpower-limited)*

Polarities are shown for module activation.

* Wiring from these terminals can exit the protected premises.

Disconnect Switch shown in disconnect position

TBL Jumper

Connect to FACP J12 & J13

Note: The 4XTMF Module is not directly suitable for transmitting a reverse polarity supervisory signal. For applications using reverse polarity of a supervisory signal, refer to “FACP with Keltron” on page 153.
2.8.3 ANN-BUS Annunciators/Modules

ANN-BUS Wiring

This section contains information on calculating ANN-BUS wire distances and the types of wiring configurations (Class B).

Calculating Wiring Distance for ANN-BUS Modules

The following instructions will guide the installer in determining the type of wire and the maximum wiring distance that can be used with FACP ANN-BUS accessory modules.

To calculate the wire gauge that must be used to connect ANN-BUS modules to the FACP, it is necessary to calculate the total worst case current draw for all modules on a single 4-conductor bus. The total worst case current draw is calculated by adding the individual worst case values for each module. The individual worst case values are shown in the following table:

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Worst Case Current Draw ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANN-80 LCD Annunciator</td>
<td>0.040 amps</td>
</tr>
<tr>
<td>ANN-100 LCD Annunciator</td>
<td>0.025 amps</td>
</tr>
<tr>
<td>ANN-S/PG Serial/Parallel Printer Interface Module</td>
<td>0.040 amps</td>
</tr>
<tr>
<td>ANN-I/O LED Driver Module</td>
<td>0.200 amps</td>
</tr>
<tr>
<td>ANN-(R)LED Annunciator Module</td>
<td>0.068 amps</td>
</tr>
<tr>
<td>ANN-RLY Relay Module</td>
<td>0.075 amps</td>
</tr>
</tbody>
</table>

¹ When powering the ANN-BUS from one of the (nonresettable) DC power outputs at TB11, the total worst case current draw cannot exceed 1.0 amp. If sharing this DC output with other devices, the worst case current drawn by these devices must be combined with the ANN-BUS current draw, and the total cannot exceed 1.0 amp. If the total current demand exceeds 1.0 amp, refer to “Powering ANN-BUS Devices from an Auxiliary Power Supply” on page 34.
In general, the wire length is limited by resistance, but for heavier wire gauges, capacitance is the limiting factor. Maximum length can never be more than 6,000 feet (1,800 m), regardless of gauge used. The following formulas are used to generate the wire distances:

\[
\text{Maximum Resistance (Ohms)} = \frac{2.0 \text{ Volts}}{\text{Total Worst Case Current Draw (amps)}}
\]

\[
\text{Maximum Wire Length (feet)} = \frac{\text{Maximum Resistance (Ohms)}}{\text{Rpu}} \times 500
\]

where: Rpu = Ohms per 1,000 feet for various Wire Gauges (see table below)

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>Ohms per 1,000 feet (Rpu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>16.2</td>
</tr>
<tr>
<td>18</td>
<td>6.4</td>
</tr>
<tr>
<td>16</td>
<td>4.02</td>
</tr>
<tr>
<td>14</td>
<td>2.54</td>
</tr>
</tbody>
</table>

**Exception:** When using the ANN-RLY module, the installer must ensure that the maximum 24VDC power line drop does not exceed 0.3 volts. This results in the following wiring limitations:

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>Maximum Wire Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>312 feet</td>
</tr>
<tr>
<td>16</td>
<td>497 feet</td>
</tr>
<tr>
<td>14</td>
<td>787 feet</td>
</tr>
<tr>
<td>12</td>
<td>1,250 feet</td>
</tr>
</tbody>
</table>

**Wiring Distance Calculation Example:**
Suppose a system is configured with the following ANN-BUS modules:
- 3 ANN-80 Remote Fire Annunciators
- 1 ANN-S/PG Serial/Parallel Printer Interface Module

The total worst case current is calculated as follows:

- ANN-80 Current Draw = 3 x 0.040 amps = 0.120 amps
- ANN-S/PG Current Draw = 1 x 0.040 amps = 0.040 amps
- Total Worst Case Current Draw = 0.160 amps

**Wiring Configuration**
Figure 2.17 illustrates the wiring between the FACP’s Primary ANN-BUS and ANN-BUS devices.

Figure 2.17 Primary ANN-BUS wiring to ANN-BUS Device
Figure 2.18 illustrates the wiring between the FACP’s Secondary ANN-BUS and ANN-BUS devices. ANN-BUS and power wiring are supervised and power-limited.

**Powering Both ANN-BUS Circuits Simultaneously**

When simultaneously using the Primary and Secondary ANN-BUS circuits on the FACP, power can be shared from the Nonresettable Power output on TB11. Alternately, one ANN-BUS can be powered by the Resettable Power output (TB11 Terminals 3 and 4) once it is reconfigured as Nonresettable Power in panel programming. This provides the benefit of independently acting power-limiting for the two ANN-BUS circuits (required for Canadian applications).

**Powering ANN-BUS Devices from an Auxiliary Power Supply**

Figure 2.19 illustrates the powering of ANN-BUS devices from an auxiliary power supply such as the FCPS-24FS6/8, when the total ANN-BUS power requirements exceed the panel’s DC Power Output capability.

Cut Ground Fault Detection jumper JP1 (FACP monitors for ground faults).

ANN-BUS and power wiring are supervised and power-limited.
Optional Module Installation

ANN-BUS Device Addressing

Each ANN-BUS device requires a unique address (ID Number) in order to communicate with the FACP. A 5-position DIP switch on each device is used to set this address. The address set for these devices must also be programmed at the FACP for the specific device (refer to the programming section titled “ANN-BUS Setup” on page 87).

A maximum of 8 devices can be connected to each FACP ANN-BUS communication circuit. Device addresses do not need to be sequential and can be set to any number between 01 and 08. This applies to both ANN-BUS communication circuits. Note that 00 is not a valid address. The following table shows the DIP switch setting for each address.

<table>
<thead>
<tr>
<th>Address</th>
<th>Switch 5</th>
<th>Switch 4</th>
<th>Switch 3</th>
<th>Switch 2</th>
<th>Switch 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>not valid</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>01</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>02</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>03</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>04</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>05</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>06</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>07</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>08</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Switch 5 must be set to OFF for ANN-BUS devices to be recognized.

ANN-80 Remote Fire Annunciator

■ Specifications
- Operating Voltage Range: 18 VDC to 28 VDC
- Current Consumption @ 24 VDC nominal (filtered and nonresettable):
  - Normal/Standby (no activity): 37.0 mA
  - Trouble: 39.0 mA
  - Alarm: 40.0 mA
  - AC Fail (not backlit): 15.0 mA
- For use indoors in a dry location

■ Installation

Ensure that all power (AC and DC) has been removed from the FACP before installing the annunciator.

■ Opening/Closing Annunciator

The following procedure details the steps used to open the annunciator in order to access the terminal block and DIP switches (refer to figure below):

1. Turn the key switch to the ON (Unlocked) position by turning the key counter-clockwise.
2. Push in the snap latch located on the right side of the unit while pulling the cover open.
3. To close the cover, make certain the key switch is in the ON (Unlocked) position. Swing the cover closed, snapping it shut.
4. Turn the key switch to the OFF (Locked) position by turning clockwise and remove the key.
**Mounting**

The ANN-80 can be surface or semi-flush mounted to a single, double or 4” square electrical box. Select and remove the appropriate knockout(s), pull the necessary wires through the knockouts and mount the annunciator in or on the wall depending on the type of installation desired.

The ANN-SB80KIT(-R/-B/-W) is an available mounting kit for the ANN-80 annunciator. The kit comes with a surface backbox and surface wedge for angled viewing. The two pieces can be used separately or can be stacked together.

The ANN-80 cover must be attached to the annunciator backplate before mounting the annunciator to the electrical box/wall. The cover cannot be reattached or removed after the annunciator has been mounted.

**Wiring ANN-80 to FACP**

The following steps can be used as a guide to wire the annunciator. Make certain all power has been removed from the FACP prior to annunciator installation.

1. Route wires from hole in backplate, through wiring channel and then to ANN-80 terminal block TB1
2. Remove appropriate amount of wire insulation
3. Connect the wiring from the FACP ANN-BUS to annunciator TB1 terminals 3 (A) & 4 (B). Make certain to connect A to A and B to B
4. If appropriate, connect the wiring going to the next device on the ANN-BUS to TB1 terminals 3 & 4. Make certain to connect A to A and B to B
5. Connect the wiring from the 24 VDC power source to annunciator TB1 terminals 1 (-) & 2 (+). Make certain to observe proper polarity
6. If appropriate, connect the power wiring going to the next device to terminals 1 (-) & 2 (+). Make certain to observe proper polarity
7. After all connections are made, remove extra wire from inside of annunciator by dressing it neatly through wire channel, with any excess wire pushed back through hole into electrical box.

![Diagram of ANN-BUS and power wiring]

**Figure 2.20 ANN-80 Wiring to FACP**

The following table shows the ANN-80 connections to the ES-50X.

<table>
<thead>
<tr>
<th>ES-50X</th>
<th>ANN-80 (TB1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal GND (-) on TB11</td>
<td>Terminal 1 (-)</td>
</tr>
<tr>
<td>Terminal PWR (+) on TB11</td>
<td>Terminal 2 (+)</td>
</tr>
<tr>
<td>Terminal Data (A) on TB9</td>
<td>Terminal 3 (A)</td>
</tr>
<tr>
<td>Terminal Data (B) on TB9</td>
<td>Terminal 4 (B)</td>
</tr>
</tbody>
</table>

**Programming**

Following installation and wiring of the ANN-80 LCD annunciator to the FACP, the annunciator must be added to the system via FACP programming. Refer to the programming section titled “ANN-BUS Setup” on page 87 in this manual for detailed programming information. Select the LCD option for programming.

**Trouble Response**

If the ANN-80 is installed but the ANN-BUS is not enabled at the FACP, the ANN-80 will indicate a trouble condition by NOT turning on its AC Power indicator. The LCD will also display **Key Bus Trouble** and the piezo will sound approximately once every 10 seconds. Note that the FACP will provide no indication of an ANN-80 trouble.

To clear the ANN-80 trouble condition, enable the ANN-BUS and program the address corresponding to the address set on the ANN-80 at the FACP.

**ANN-100 Remote Fire Annunciator**

**Specifications**

- Operating Voltage: 24 VDC
- Current
  - Standby: 20 mA
  - Alarm: 25 mA
- Ambient Temperature: 32°F to 120°F (0°C to 49°C)
- Max. Wiring Distance from FACP: 6,000 ft. (1,800 m)
- Mounting: Surface or Flush-mount
- Dimensions: 12-1/4"W x 11-1/2"H x 7/8"D (31.1 cm W x 29.2 cm H x 2.2 cm D)
- For indoor use in a dry location only

The following table shows the ANN-100 connections to the ES-50X.

<table>
<thead>
<tr>
<th>ES-50X</th>
<th>ANN-100 (TB1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal GND (-) on TB11</td>
<td>Terminal 1 (-)</td>
</tr>
<tr>
<td>Terminal PWR (+) on TB11</td>
<td>Terminal 2 (+)</td>
</tr>
<tr>
<td>Terminal Data (A) on TB9</td>
<td>Terminal 3 (A)</td>
</tr>
<tr>
<td>Terminal Data (B) on TB9</td>
<td>Terminal 4 (B)</td>
</tr>
</tbody>
</table>
Installation

Optional Module Installation

■ Programming
Following installation and wiring of the ANN-100 LCD annunciator to the FACP, the annunciator must be added to the system via FACP programming. Refer to the programming section titled “ANN-BUS Setup” on page 87 in this manual for detailed programming information.

■ Trouble Response
If the ANN-100 is installed but the ANN-BUS is not enabled at the FACP, the ANN-100 will indicate a trouble condition by NOT turning on its AC Power indicator. The LCD will also display Key Bus Trouble and the piezo will sound approximately once every 10 seconds. Note that the FACP will provide no indication of an ANN-100 trouble.

To clear the ANN-100 trouble condition, enable the ANN-BUS and program the address corresponding to the address set on the ANN-100 at the FACP.

ANN-S/PG Serial/Parallel Interface Module

■ Installation
1. Ensure that all power (AC and DC) has been removed from the FACP.
2. Connect the ANN-S/PG to the FACP as illustrated in Figure 2.21
3. Using the DIP switches on the back of the ANN-S/PG module, assign an ID number (address) to the module.
4. Select the address and configuration options for the ANN-S/PG module as described in the Programming section of this manual (refer to “ANN-BUS Setup” on page 87).
   Note that the Auto-configure feature allows the programmer to quickly bring all installed ANN-BUS modules online (refer to “Auto-Configure” on page 94).
5. Connect a printer to the ANN-S/PG Parallel or Serial connectors (refer to Figure 2.21). Only one printer can be connected.

■ Specifications
• Operating Voltage: 24 VDC
• Current (Alarm and Standby): 45 mA
• Ambient Temperature: 32°F to 120°F (0°C to 49°C)
• Max. Wiring Distance from FACP: 6,000 ft. (1,800 m)
• Mounting: Surface
• Dimensions: 6"W x 7-3/4"H x 1-7/16"D (15.2 cm W x 19.7 cm H x 3.7 cm D)
• For indoor use in a dry location only

■ Connecting a PRN-7 Printer
Remote printers require a primary AC power source. If required for the fire alarm system configuration (for example, a Proprietary Fire Alarm System), a remote printer requires a secondary power source (battery backup). Since a secondary power source is not provided as a standard feature, a separate UL-listed Uninterruptible Power Supply (UPS) should be used. The building emergency power supply may be used, as long as it meets the power continuity requirements of NFPA 72. Refer to NFPA 72 for further details.

Connect the remote printer to the FACP via the ANN-S/PG module using a standard DB-9 cable. One end of the cable will plug into the DB-9 connector on the PRN-7 printer and the other end plugs into the serial connector on the ANN-S/PG module.
Optional Module Installation

Setting Printer Options
Refer to the documentation supplied with the PRN-7 printer for instructions on using the printer menu controls. Set the printer options (under the menu area) as shown in the following table:

<table>
<thead>
<tr>
<th>Option</th>
<th>Setting</th>
<th>Option</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Font</td>
<td>HS Draft</td>
<td>CPI</td>
<td>10CPI</td>
</tr>
<tr>
<td>LPI</td>
<td>6 LPI</td>
<td>Skip</td>
<td>0.5</td>
</tr>
<tr>
<td>ESC Character</td>
<td>ESC</td>
<td>Emulate</td>
<td>LQ-2550</td>
</tr>
<tr>
<td>Bidirectional Copy</td>
<td>ON</td>
<td>I/O</td>
<td></td>
</tr>
<tr>
<td>CG-TAB</td>
<td>Graphic</td>
<td>Buffer</td>
<td>64K</td>
</tr>
<tr>
<td>Country</td>
<td>E-US ASCII</td>
<td>Serial</td>
<td></td>
</tr>
<tr>
<td>Auto CR</td>
<td>OFF</td>
<td>Baud</td>
<td>9600 or 2400</td>
</tr>
<tr>
<td>Color Option</td>
<td>Not Installed</td>
<td>Format</td>
<td>7 Bit, Even, 1 Stop</td>
</tr>
<tr>
<td>Formien</td>
<td></td>
<td>Protocol</td>
<td>XON/XOFF</td>
</tr>
<tr>
<td>Lines</td>
<td>6LPI=60</td>
<td>Character Set</td>
<td>Standard</td>
</tr>
<tr>
<td>Standard</td>
<td>Exec 10.5</td>
<td>Si.Zero</td>
<td>On</td>
</tr>
<tr>
<td>Barcode</td>
<td>Off</td>
<td>Auto LF</td>
<td>On</td>
</tr>
<tr>
<td>Barcode</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.1 PRN-7 Setup Options

PRN-6F Printer Installation
When connected to the FACP via the ANN-S/PG module, the PRN-6F prints the status changes within the control panel and time-stamps the printout with the time of day and date that the event occurred. It provides 80 columns of data on standard 9” x 11” tractor-feed paper. This section contains information on connecting a printer to the control panel and setting the printer options.

Connecting PRN-6F Printer
Remote printers require a primary AC power source. If required for the fire alarm system configuration (for example, a Proprietary Fire Alarm System), a remote printer requires a secondary power source (battery backup). Since a secondary power source is not provided as a standard feature, a separate UL-listed Uninterruptible Power Supply (UPS) should be used. The building emergency power supply may be used, as long as it meets the power continuity requirements of NFPA 72. Refer to NFPA 72 for further details.

Connect the remote printer to the FACP via the ANN-S/PG module using a standard DB-25 cable. One end of the cable will plug into the DB-25 connector on the PRN printer and the other end plugs into the parallel connector on the ANN-S/PG module. Note that the 9-pin DB-9 port on the ANN-S/PG is used to connect a serial printer. The 25-pin port is used for a Centronics parallel printer cable. Connect either a serial or parallel printer, but not both at the same time.

Setting Printer Options
Refer to the documentation supplied with the PRN-6F printer for instructions on using the printer menu controls. Set the printer options (under the menu area) as shown in the following table:

<table>
<thead>
<tr>
<th>Option</th>
<th>Setting</th>
<th>Option</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Font</td>
<td>HS Draft</td>
<td>CPI</td>
<td>10CPI</td>
</tr>
<tr>
<td>LPI</td>
<td>6 LPI</td>
<td>Skip</td>
<td>0.5</td>
</tr>
<tr>
<td>ESC Character</td>
<td>ESC</td>
<td>Emulate</td>
<td>Epson FX-850</td>
</tr>
<tr>
<td>Bidirectional Copy</td>
<td>ON</td>
<td>I/O</td>
<td></td>
</tr>
<tr>
<td>CG-TAB</td>
<td>Graphic</td>
<td>Buffer</td>
<td>40K</td>
</tr>
<tr>
<td>Country</td>
<td>E-US ASCII</td>
<td>Serial</td>
<td></td>
</tr>
<tr>
<td>Auto CR</td>
<td>OFF</td>
<td>Baud</td>
<td>9600 or 2400</td>
</tr>
<tr>
<td>Color Option</td>
<td>Not Installed</td>
<td>Format</td>
<td>7 Bit, Even, 1 Stop</td>
</tr>
<tr>
<td>Formien</td>
<td></td>
<td>Protocol</td>
<td>XON/XOFF</td>
</tr>
<tr>
<td>Lines</td>
<td>6LPI=60</td>
<td>Character Set</td>
<td>Standard</td>
</tr>
<tr>
<td>Standard</td>
<td>Exec 10.5</td>
<td>Si.Zero</td>
<td>On</td>
</tr>
<tr>
<td>Barcode</td>
<td>Off</td>
<td>Auto LF</td>
<td>On</td>
</tr>
<tr>
<td>Barcode</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2 PRN-6 Setup Options
**ANN-I/O LED Driver Module**

- **ANN-I/O Board Layout**

  Figure 2.22 illustrates the ANN-I/O board showing locations of screw terminals for connection to the FACP, pin connectors for connecting LEDs and the DIP switch for selecting the ANN-BUS ID number.

![ANN-I/O Board Layout](ann-iobrd2.wm)

**Specifications**

- Max. ANN-BUS Voltage: 24 VDC
- Max. Current:
  - Alarm: 200 mA
  - Standby: 35 mA
  - Each LED: 10 mA
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- For indoor use in a dry location only
**ANN-I/O Connection to FACP**

The ANN-I/O connects to the FACP via the ANN-BUS as illustrated in Figure 2.23. After the ANN-I/O is connected to the panel, it must be added to the system via FACP programming. Refer to the section titled “ANN-I/O Options” on page 88.

**ANN-I/O Module LED Wiring**

There are four 12-pin connectors on the ANN-I/O module for connecting LEDs. Each set of 10 LEDs get their power from Pin 11 of the corresponding connector. Internal resistors are sized so that there is approximately 10 mA of current for each LED. No series resistors are required. LED outputs can be mapped to output circuits. Refer to the programming section titled “ANN-I/O Options” on page 88 of this manual.

The LEDs are wired as illustrated in Figure 2.24. Note that the illustration depicts only connectors P1 and P2. Wiring is identical for P3 (LEDs 21-30) and P4 (LEDs 31-40).
Optional Module Installation

ANN-LED Annunciator Module

Figure 2.24 ANN-I/O LED Wiring

Figure 2.25 ANN-LEDs (shown in possible stacked configuration)
Optional Module Installation

Specifications
- Max. ANN-BUS Voltage: 24 VDC
- Max. Current:
  - Alarm: 68 mA
  - Standby: 28 mA
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- For indoor use in a dry location only

Mounting/Installation
The ANN-LED Module is supplied with a metal backbox, mounting bracket, and cover. Refer to the ANN-LED Installation Document #53032 for more information.

Figure 2.26 Exploded View of ANN-LED

ANN-LED Board Layout and Connection to FACP
Figure 2.27 illustrates the ANN-LED board showing locations of screw terminals for connection to the FACP and the DIP switches for selecting the ANN-BUS ID number.

Figure 2.27 ANN-LED Board Layout and Connection to FACP
ANN-RLY Annunciator Module

Specifications

- Operating Voltage: 24 VDC
- Max. Current:
  - Alarm: 75 mA
  - Standby: 15 mA
- Operating Temperature: 32°F to 120°F (0°C to 49°C)
- For indoor use in a dry location only

Mounting/Installation

The ANN-RLY relay module can be mounted inside the FACP main circuit board chassis or inside the ROME Series enclosure. Refer to the ANN-RLY Installation Document #53033 for instructions on chassis mounting or to the ROME Series Installation Document #53530 for mounting in the separate backbox.

Figure 2.28  ANN-RLY Mounting Options
**ANN-RLY Board Layout and Connection to FACP**

Figure 2.29 illustrates the ANN-RLY board showing locations of screw terminals for connection to the FACP and the DIP switches for selecting the ANN-BUS ID number.

2.8.4 Printer

A parallel printer may be connected to the FACP using the optional ANN-S/PG Serial/Parallel Interface Module. The printer can be used to provide a hard-copy printout of real-time events, history file and walktest data. Installation of the device requires panel programming to allow the FACP to communicate with the device. Refer to “ANN-S/PG Serial/Parallel Interface Module” on page 18 for installation details. Refer to “ANN-BUS Setup” on page 87 for programming information.

**CAUTION: POSSIBLE EQUIPMENT DAMAGE**

DO NOT CONNECT A PRINTER OR PC TO THE ES-50X FACP IF A GROUND FAULT (ZERO IMPEDANCE TO GROUND) EXISTS ON THE CONTROL PANEL. CIRCUIT DAMAGE MAY RESULT. REMOVE ALL POWER (PRIMARY AND SECONDARY) BEFORE INSTALLING OR REMOVING ANY WIRING.

**Printer Configuration**

Refer to the documentation supplied with the printer for pertinent information about printer setup. Set the printer’s options as listed in the following table:

<table>
<thead>
<tr>
<th>COMMUNICATION SETUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUFFER:</td>
</tr>
<tr>
<td>DATA BITS:</td>
</tr>
<tr>
<td>PARITY:</td>
</tr>
<tr>
<td>STOP BIT:</td>
</tr>
<tr>
<td>BAUD RATE:</td>
</tr>
<tr>
<td>AUTOMATIC LINE FEED:</td>
</tr>
<tr>
<td>AUTOMATIC CARRIAGE RETURN:</td>
</tr>
</tbody>
</table>

Table 2.3 Printer Options
2.8.5 W-GATE Wireless Gateway

The W-GATE connects to the FACP’s SLC connection at TB10. The W-GATE can be powered by either the SLC or an external 24 VDC power source. Refer to the SWIFT® Smart Wireless Integrated Fire Technology Manual for more information.

![W-GATE SLC Connection Diagram](image)

**Figure 2.30 W-GATE SLC Connection**

**NOTE:** The W-GATE, as part of the wireless network, has been tested for compliance with the Federal Communications Commission (FCC) requirements of the United States Government. It has not been evaluated for use outside the USA. Use of this system outside the USA is subject to local laws and rules to which this product may not conform. It is the sole responsibility of the user to determine if this product may be legally used outside the USA.
Section 3: Programming

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION AND OTHER INVOLVED PARTIES

This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below:

<table>
<thead>
<tr>
<th>Program feature or option</th>
<th>Permitted in UL864/ULC527? (Y/N)</th>
<th>Possible settings</th>
<th>Settings permitted in UL864 / ULC527</th>
</tr>
</thead>
</table>
| Trouble Call Limit        | N                                | Refer to “Trouble Report Limit (Dialer Runaway Prevention)” on page 84.  
• Trouble Call Limit = 0 (factory default): unlimited calling to Central Station for any trouble condition  
• Trouble Call Limit = 1 - 99: limits call for each unique trouble to from 1 to 99 within a 24 hour period | Trouble Call Limit = 0 for unlimited Central Station trouble calls |
| AC Fail Delay Timer       | Y                                | Refer to “AC Loss Delay” on page 73.  
• 0-23 hours | 1-3 hours |
| Remote Download          | Y                                | Refer to “FS-Tools Upload/Download” on page 120.  
• Remote Download - Proprietary No  
• Remote Download - Proprietary Yes | Remote Download Proprietary Yes for Proprietary system intended to protect only contiguous properties |
| Control Module Delay      | N                                | Refer to “Control Module Delay” on page 73.  
• Control Module Delay = 0 (factory default): no delay in Control Module activation  
• Control Module Delay = 1-180: delays control module activation from 1-180 seconds | Control Module Delay = 0 for no delay in control module activation |
| Cellular/Ethernet Supervision Options | Y | Refer to “Supervision Settings” on page 83 and page 84.  
• NFPA 2010 Dual Path: Supervision Interval: 24 Hours  
• NFPA 2010 Sole Path: Supervision Interval: 5 min  
• NFPA 2013 Dual Path: Supervision Interval: 6 Hours  
• NFPA 2013 Sole Path: Supervision Interval: 1 Hour | Any setting is permitted for UL864. For ULC applications, the supervision interval for panels communicating in Sole Path (Cellular-only or Ethernet-only method) is fixed at 3 minutes and cannot be changed, regardless of setting option, when the Canadian Option is enabled. |
| Trouble Reminder (when used with SWIFT wireless devices) | Y | Refer to “Trouble Reminder” on page 77  
• 4 hours  
• 24 hours | 4 hours |
| 4XTMF Supervision         | Y                                | Refer to “4XTMF Supervision” on page 78.  
• Enabled Yes  
• Enabled No | Enabled Yes when the 4XTMF module is installed. |
| Supervised Phone Line     | Y                                | Refer to “Supervised Phone Line” on page 79.  
• Supervised Yes  
• Supervised No | Supervised Yes if transmission method is POTS. |
| Test Time Interval        | Y                                | Refer to “Test Time Interval” on page 82.  
• 24 hours  
• 12 hours  
• 8 hours  
• 6 hours | 6 hours |
| Annunciator Lock Enable   | Y                                | Refer to “Lock Enable Option” on page 96.  
• Enabled Yes  
• Enabled No | Enabled Yes |
| Canadian Option           | N (UL864) Y (ULC527)            | Refer to “Canadian Option” on page 77.  
• On  
• Off | Off (UL864)  
On (ULC527) |

3.1 Programming Data Entry

Programming can be accomplished using the ES-50X keypad or by connecting an optional standard computer keyboard. The keyboard can be connected to the USB connector J20 on the control panel main circuit board.

The information presented in this section refers to programming the ES-50X via the onboard keypad. If an optional computer keyboard is connected to the ES-50X main circuit board, the following table describes the keyboard keys which correspond to the onboard keypad keys.
3.2 User Programming

The ES-50X is completely field programmable and requires no special software skills. While programming the ES-50X, the fire protection capabilities of the control panel are enabled.

Site-specific programming may be accomplished in any of the following ways:

- **Autoprogramming Feature** - This is a convenient method for quickly bringing the FACP addressable SLC devices on-line without the necessity of programming each device individually. Refer to “Autoprogram” on page 50 for a detailed description of Autoprogramming.
- Manual programming or editing, using the FACP keypad or a PC keyboard
- Remote Programming and Editing Feature - allows creation and editing of site-specific custom programs using a Windows-based computer and Ethernet connection. For programs requiring a large amount of data entry, this method may be preferred. The FS-Tools programming utility can be downloaded from www.firelite.com for this purpose.
- Local Programming and Editing Feature - allows creation and editing of site-specific custom programs using a Windows-based computer and the FACP USB connection. For programs requiring a large amount of data entry, this method may be preferred. The FS-Tools programming utility can be downloaded from www.firelite.com for this purpose.
- The System Normal screen will be displayed in a programmed system with no active alarms, troubles or supervisories, as illustrated below:

Read Status mode can be entered while the panel is in any mode of operation. If an alarm or supervisory event exists at the panel, the event must be cleared before entering Programming mode. To access any of the programming or read status features, the Enter or Mode key must be pressed, which will cause the LCD to display the following:
Pressing 1, while this screen is being displayed, will cause the control panel to enter the Read Status Mode which allows the user to view the programmed features and status of the control panel. The Read Status feature is not password protected. Refer to “Read Status” on page 111 for a detailed description of this feature.

Pressing 2 will select user Programming Mode which may only be accomplished by an authorized person. After pressing 2, a screen will prompt for a password. After entering the correct password, the user may select from a list of programming options.

Pressing 3 will select FS-Tools Up/Download which allows the user to enable the remote programming option. Refer to “FS-Tools Upload/Download” on page 120.

Pressing 4 will select USB Up/Download which allows the user to upload or download FACP programming via the USB port. See “USB Upload/Download” on page 122.

The down arrow which appears in the display indicates that additional programming choices can be viewed by pressing the down arrow key on the keypad. If a down and up arrow appear in the display, pressing the ‘down’ arrow key will display the subsequent Programming Screens as illustrated below while pressing the ‘up’ arrow key will display the previous screen.

Pressing the down arrow displays the following screen:

Pressing 1, while this screen is being displayed, allows the user to upgrade the panel software. Refer to “Firmware Upgrade” on page 124.

Exit Programming and Read Status

The programmer can exit any mode by repeatedly pressing the keypad ESC (Escape) key until the display reads System Normal. Note that the data which is entered during Programming mode is not saved until the programmer exits this mode by repeatedly pressing the ‘ESC’ key. If the Reset key is pressed or power is lost before exiting Programming mode, all data just entered will be lost.

User Programming Levels

There are two user programming levels:

- User Master Program Level 1 is used for programming panel specific data relating to device types, zoning, messages, control panel functions, etc.
- User Maintenance Program Level 2 is used by a qualified operator to access features such as Disable/Enable, View and Clear History, Walktest, and System Time Change.

3.3 Initial Power-up

The following sections describe the initial programming procedures for a new system. The same procedures are used to modify programming in an existing system.

After completing the wiring of addressable devices to the SLC, apply power to the control panel. If the addressable devices have not yet been programmed into the FACP, their LEDs will not flash and the following trouble message will be displayed.

3.4 Programming Screens Description

The options available when the Enter key is pressed are: Read Status, Programming. The Read Status and Programming options have multiple functions or features which may be chosen. To view all of the choices, it is necessary that the programmer scroll through a number of additional subscreens. These selections are displayed on multiple screens to make them more readable for the programmer. Refer to “Master Programming Level” on page 50, for additional information on the various screens.

The title of the main option screen will always be displayed at the top of the subscreens for the programmer’s convenience. If additional subscreens exist, an Up or Down arrow will be displayed in the upper right corner of the screen being viewed. The programmer can then press the keypad Up or Down arrow key to view the new subscreen. To select one of the choices in a screen, the programmer presses the keypad numerical key corresponding to the desired choice.

Note that subscreens may also have multiple options which require viewing more than one screen. The same process, as detailed in the previous paragraphs, is followed to view all option choices.

3.5 Programming and Passwords

There are two factory set programming passwords which will access the Programming screens as indicated in the following examples. From either of the screens, access to specific system and device features or programming may be obtained. All user programming entries are stored in nonvolatile memory. The factory set passwords can be changed by the user as described in “Password Change” on page 96. If an invalid password is entered, the blinking cursor will return to the first password character position. To exit Programming or Read Status mode at any time, press the ESC (Escape) key repeatedly. Note that Programming mode must be exited using the ESC key in order to store the program data entered during this mode. If the Reset key is pressed or power is lost before exiting Programming mode, the data just entered will not be saved.
To access user Programming mode, press the Enter or Mode key. The LCD will display the following.

To enter the user Programming mode, press 2. The display will read as follows:

Entering the Master level password (default 00000000) will cause the following screen to appear:

If the Maintenance level password (default 11111111) is entered, the following screen will appear:

Note that in the two preceding screens, an arrow appears to inform the programmer that additional options can be viewed by pressing the keypad down arrow key.

### 3.6 Master Programming Level

When the Master Program Level password is entered, the control panel will enter user Programming mode. In this mode, the piezo sounder remains off, the trouble relay is activated and the system Trouble LED flashes until Programming mode is exited. The following display will appear:

Pressing the down arrow will display more programming options:

### 3.6.1 Autoprogram

Pressing 1 while viewing Programming Screen #1, will select the Autoprogram option, which prompts the control panel to poll all devices installed on the SLC loop. The primary purpose of autoprogramming is to allow the installer a fast and easy way to bring the system on-line as quickly as possible. The first time the system is powered-up, it should be autoprogrammed.

If the system is already programmed and Autoprogram is initiated, the system will only add default values for newly installed devices.

When Autoprogram is selected, the control panel will begin autoprogramming the system by communicating with each addressable device installed on the SLC loop. While autoprogramming, the panel will display the following:
When Autoprogramming is completed, the control panel will display the type and quantity of each device installed on the SLC loop similar to the following display:

```
# OF DET LOOP1 055
# OF MON LOOP1 035
# OF CON LOOP1 030
```

Autoprogram Result Screen #1

In the preceding example, the display indicates that the SLC Loop has 55 addressable detectors, 35 monitor modules and 30 control modules installed.

Pressing the ESC key will return the display to Programming Screen #1.

### 3.6.2 Point Program

The Point Program option allows the programmer to add a new addressable device to the SLC loop, delete an existing device from the loop or change the programming for an existing device. Pressing 2, while viewing Programming Screen #1, will select the Point Program option and display the following screens:

**Detector Programming**

Pressing 1, while viewing the Point Program Screen, will allow the programmer to add, delete or change the programming of an addressable detector. The following screen will be displayed by the control panel:

```
DETECTOR
1=ADD
2=DELETE
3=EDIT
```

**Add Detector**

Pressing 1 while viewing the Detector Screen will display the following screen which allows the programmer to add a new detector address to programming:

```
ADD DETECTOR
ENTER DETECTOR#
***
```

Add Detector Screen

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit detector address, such as 005. The screen will then ask whether the detector being added is wireless.

```
ADD DETECTOR
1=DETECTOR
2=DETECTOR:WIRELESS
```

Add Detector Screen

Select 1 for wired detector or 2 for wireless detector. When the choice is selected, the following screen will be displayed:

```
DETECTOR TYPE
1=SMOKE(Photo)
2=USER-DEFINED-1
3=SMOKE(ION)
```

through

```
DETECTOR TYPE
1=FIRE CO
2=USER-DEFINED-12
```

Press the down arrow key to view additional choices. Press the number corresponding to the desired selection to program that type to the newly added detector. If the selected detector is a multi-criteria Fire (Photo)/CO detector, select 1 for Fire CO. When the type has been selected, the following screen will be displayed:

```
ADD DETECTOR
DETECTOR# 005 IS ADDED
```
The programmer can continue adding detectors by pressing the ESC key which will return the display to the Add Detector Screen.

### Delete Detector

Pressing 2 in the Detector Screen will display the Delete Detector Screen which allows the programmer to delete a specific detector:

```
DELETE DETECTOR
ENTER DETECTOR#
***
```

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit detector address, such as 005. When the last digit is keyed-in, the following screen will be displayed:

```
DELETE DETECTOR
DETECTOR# 005
IS DELETED
```

The programmer can continue deleting detectors by pressing the ESC key which will return the display to the Delete Detector Screen.

### Edit Detector

The programmer can change a detector's existing or factory default programming by pressing 3 in the Detector Screen. The following screen will be displayed:

```
EDIT DETECTOR
ENTER POINT ADDRESS
***
```

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit detector address, such as 017.

When the last digit is keyed-in, if the selected address has not been added to programming, a screen showing information about a device that is installed with a lower address, closest to the selected address, will be displayed.

If no detectors have been installed on the loop, the following will be displayed:

```
NO DETECTOR INSTALLED
```

If the selected address has been added to programming, device summary screens will be displayed. These screens allow the programmer to view all device settings at a single glance. Pressing the left or right arrow keys will allow the programmer to rapidly view the devices at the previous or next address (if installed).

If a detector (such as a photoelectric detector) with the selected address is not physically installed on the SLC or has a communication fault but the address is programmed in the system, the following screen will be displayed:

```
TROUBL SMOKE(PHOTO) <ADJ><NOUN>
ZNNN
*
1D017
```

If the selected address has been added to programming and a detector (such as a photoelectric detector) with the selected address is physically installed on the SLC and is communicating with the control panel, the following will be displayed:

```
NORMAL SMOKE (PHOTO) <ADJ><NOUN>
ZNNN
**
1D017
```

To change the programming for the displayed detector, press the keyboard ‘down’ arrow key to view the Edit Detector screens.

In the preceding example:
✓ Normal - indicates that the detector with the selected address is physically installed on the SLC and communicating with the control panel (enabled)
✓  <ADJ><NOUN> - represents the adjective and noun, which have been programmed, describing the location of the displayed device
✓ ZNNN - represents the first of five possible software zones that the detector is assigned to (NNN = the three digit zone number from 000 - 049)
✓ V or * - indicates whether or not alarm verification is enabled (V = alarm verification enabled and * = alarm verification disabled)
✓ W or * - indicates whether or not walktest is enabled (W = walktest enabled and * = walktest disabled)
✓ X or * - indicates whether or not the detector is wireless (X = wireless detector and * = wired detector)
✓ 1D017 - represents the Loop, Device type and Device address (1=SLC Loop, D=Detector and 017=Detector Address 017)

The following examples show the editing of a photoelectric smoke detector with address 017, located on the SLC loop:

**Enable/Disable Detector**

To Enable or Disable the detector, press the 1 key while viewing the Edit Detector Screen #2. Each press of the key will toggle the screen between Enabled Yes and Enabled No. If Enabled No is selected, the detector will not be polled by the control panel, preventing the detector from reporting alarms and troubles to the panel. The control panel will display the device type and address which has been disabled and will turn on the Trouble LED and Disable LED.

**Type**

To select the type of detector being programmed, press the 2 key while viewing the Edit Detector Screen #2. This will cause the control panel to display the following Detector Type Screens:

Pressing the down arrow key will display additional detector types as indicated in the following table.

<table>
<thead>
<tr>
<th>Detector Type</th>
<th>Action When Activated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke Photo</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-1</td>
<td>same as previous (Smoke Photo)</td>
</tr>
<tr>
<td>Smoke (Ion)</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-2</td>
<td>same as previous (Smoke Ion)</td>
</tr>
<tr>
<td>Heat Detect</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-3</td>
<td>same as previous (Heat Detect)</td>
</tr>
<tr>
<td>Smoke Duct-P</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-4</td>
<td>same as previous (Smoke Duct-P)</td>
</tr>
<tr>
<td>Photo w/Heat</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-5</td>
<td>same as previous (Photo w/Heat)</td>
</tr>
<tr>
<td>Duct Superv</td>
<td>Supervisory, latching</td>
</tr>
<tr>
<td>User-Defined-7</td>
<td>same as previous (Duct Superv)</td>
</tr>
<tr>
<td>Photo Super AR</td>
<td>Supervisory, nonlatching (works only in LiteSpeed)</td>
</tr>
<tr>
<td>User-Defined-8</td>
<td>same as previous (Photo Super AR)</td>
</tr>
<tr>
<td>ADAPT</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-10</td>
<td>same as previous (ADAPT)</td>
</tr>
<tr>
<td>Beam</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-11</td>
<td>same as previous (Beam)</td>
</tr>
</tbody>
</table>
While viewing either Detector Type screen, select the type of detector being programmed by pressing the corresponding keyboard number key. The display will return to Edit Detector Screen #2 and indicate the selection next to the Type option.

NOTE: If a detector is selected to be a DUCT SUPERV type, it will function like a supervisory point not a fire alarm point. The supervisory LED and supervisory relay will activate, not the fire alarm LED or alarm relay, if the detector senses smoke.

If the selected detector is a multi-criteria Fire/CO detector, select 1 for Fire CO on the last screen and the following will display:

<table>
<thead>
<tr>
<th>DETECTOR RESPONSE</th>
<th>1=CO</th>
<th>2=HEAT</th>
<th>3=PHOTO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ALARM</td>
<td>ALARM</td>
<td>ALARM</td>
</tr>
</tbody>
</table>

In this screen, select the action performed by the detector when it is activated. Press 1 to change the response for the Photo element of the detector, 2 for the Heat element, and 3 for the CO element. The detector response will toggle between Alarm (sends an Alarm signal to the FACP), Supervisory (sends a Supervisory signal to the FACP, and None (no signal sent to the FACP).

Verification

Verification is used to confirm that a smoke detector activation is a true alarm condition and not a false alarm. This feature is selected by pressing 3 while viewing the Edit Detector Screen #2 so that the display reads Verification On. Each time the 3 key is pressed, the display will toggle between Verification On and Verification Off. For a detailed description, refer to “Alarm Verification (None or One Minute)” on page 110.

Walktest

The Walktest feature allows one person to test the system devices without the necessity of manually resetting the control panel after each device activation. To enable a device for the Walktest feature, press 1 while viewing the Edit Detector Screen #3 until the display reads Walktest Yes. Each press of the 1 key will cause the display to toggle between Walktest Yes and Walktest No. Refer to “Walktest” on page 110.

PAS

The PAS (Positive Alarm Sequence) option will program an automatic, addressable detector to delay panel activation (including alarm relay and communicator) for a period of 15 seconds plus a programmable time of up to 3 minutes. Zone 047, however, will activate immediately and may be used to connect a signaling device to indicate PAS activation (do not use a Notification Appliance Circuit for this purpose). To enable the PAS feature, press 2 while viewing the Edit Detector Screen #3 until the display reads PAS Yes. Each press of the 2 key will cause the display to toggle between PAS Yes and PAS No. Refer to “Positive Alarm Sequence” on page 109.

For example, if a detector with address 005 is to be configured for PAS operation:

✔ Select PAS Yes when editing the detector set to address 005
✔ Program the desired zone or zones to be activated by this detector, in this example Z001
✔ Program an output, such as a control module that is to be activated by detector 005 by assigning the same zone to it; in this example Z001
✔ Program an output, such as a control module, for PAS activation by assigning zone Z047 to it. This control module may be connected to a signaling device used to indicate a PAS condition (do not use a Notification Appliance Circuit for this purpose)
✔ Enable zones Z001 and Special Purpose Zone PAS 047 and set the PAS delay timer to some value

With the preceding program settings, when the detector with address 005 is activated, zone Z047 will cause its associated control module to activate immediately, sounding the connected PAS signaling device. Following the PAS delay time, zone Z001 will cause its associated control module to activate and the control panel will initiate an alarm condition.

Note that a detector can be enabled for either PAS or Pre-signal but not both.

Pre-signal

The Pre-signal option programs the detector to delay panel activation for a preprogrammed time delay of up to three minutes while allowing for visual verification by a person. Note that the alarm relay and communicator will respond to the initial alarm immediately. In addition, Zone 18 will activate. This zone can be programmed to a control module which may be used to activate a sounder or indicator which the installer designates as a Presignal indication (do not use a Notification Appliance Circuit for this purpose). To enable the Pre-signal feature, press 3 while viewing Edit Detector Screen #3 until the display reads Pre-signal Yes. Each press of the 3 key will cause the display to toggle between Pre-signal Yes and Pre-signal No. Refer to “Presignal” on page 109.

For example, if a detector with address 005 is to be configured for Pre-Signal operation:

✔ Select Pre-signal Yes when editing the detector set to address 005
✔ Program the desired zone or zones to be activated by this detector, in this example Z001
✔ Program an output, such as a control module that is to be activated by detector 005 by assigning the same zone to it; in this example Z001
✔ Program an output, such as a control module, for Pre-signal activation by assigning zone Z048 to it. This control module may be connected to a signaling device used to indicate a Pre-signal condition (do not use a Notification Appliance Circuit for this purpose)
Enable zones Z001 and Special Purpose Zone Pre-signal 048 and set the Pre-signal delay timer to some value.

With the preceding program settings, when the detector with address 005 is activated, zone Z048 will cause its associated control module to activate immediately, sounding the connected signaling device to indicate the Pre-signal condition. Following the Pre-signal delay time, zone Z001 will cause its associated control module to activate and the control panel will initiate an alarm condition.

Note that a detector can be enabled for either PAS or Pre-signal, but not both.

**Zone Assignment**

A maximum of five zones can be programmed to each addressable detector. Pressing 1 while viewing Edit Detector Screen #4 displays the following screen:

![Zone Assignment Screen](image)

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the right. Enter the three digit number corresponding to the zone that is to be assigned to this device. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zone Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Edit Detector Screen #4. Note that the left and right arrow keys can be used to navigate through the zones and the CLEAR key can be used to quickly clear a zone.

If the selected detector is a multi-criteria detector, the following screen will display respectively before the Zone Assignment Screen allowing the user to program the zones independently.

![Multi-Criteria Detector Zones Screen](image)

**Wireless**

The Wireless selection will update automatically if the system recognizes a wireless device. A wireless device operates as part of the SWIFT® wireless network. If the detector is wireless, the display reads Wireless Yes. If the device is wired, the display will read Wireless No. For more information on the SWIFT wireless network, refer to the SWIFT manual, #LS10036-000FL-E.

**Sounder Base**

The Sounder Base selection allows the programmer to enter different values if the selected detector is mounted in an addressable sounder base. Pressing 2 while viewing Edit Detector Screen #5 will display the following:

![Sounder Base Screen #1](image)

If the selected detector has been installed in a sounder base, press 1 while viewing Sounder Base Screen #1 until the display reads Installed Yes. Each press of the 1 key will cause the display to toggle between Installed Yes and Installed No.

The Silenceable selection allows the programmer to select whether the selected sounder base can be silenced, either by pressing the Alarm Silence key or by enabling Autosilence. Pressing the 2 key while viewing Sounder Base Screen #1 will enable the Silenceable feature causing the display to read Silenceable Yes. Repeated presses of the 2 key will cause the display to toggle between Silenceable Yes and Silenceable No.

The Fire Coding feature allows the programmer to select the type of output that the sounder base will generate when activated. Pressing 3 while viewing Sounder Base Screen #1 will cause the following displays to appear:

![Coding Screen #1](image)

The programmer can select the sounder base output by pressing the number corresponding to the desired output. The coding selections are:

- Steady - a continuous output with no coding
- Temporal 3 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, 1½ Seconds Off
- Temporal 4 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, 1½ Seconds Off
The sounder base volume has two settings: Low, or High. Press 1 while viewing Sounder Base Screen #2 until the display reads Low or High as desired. Each press of the 1 key will cause the display to toggle between Volume Low and Volume High.

A maximum of five zones can be programmed to each sounder base. Pressing 2 while viewing Sounder Base Screen #2 displays the following screen:

```
ZONE ASSIGNMENT
Z***Z***Z***Z***
```

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the left. Enter the three digit number corresponding to the zone that is to be assigned to this sounder base. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zone Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Sounder Base Screen #2. Note that the left and right arrow keys can be used to navigate through the zones and the CLEAR key can be used to quickly clear a zone.

CAUTION: VERIFY SOUNDER BASE MODEL NUMBER

USE OF THE SOUNDER BASE PROGRAMMING OPTIONS REQUIRES THE USE OF THE B200S SOUNDER BASE. WHILE THE B200SR SOUNDER BASE IS COMPATIBLE, IT DOES NOT ALLOW FOR SPECIAL PROGRAMMING OPTIONS. IF USING THE B200SR, SET THE SOUNDER BASE OPTION TO “NO”. IF SET TO “YES”, AN ERROR WILL OCCUR AND THE SYSTEM WILL DISPLAY AN INVALID REPLY. CODING OPTIONS FOR THE B200SR ARE ACHIEVED MANUALLY WITH JUMPER SETTINGS ON THE DEVICE.

Noun/Adjective

The Noun/Adjective selection allows the programmer to enter specific descriptors about the detector currently being programmed. Pressing 1 while viewing Edit Detector Screen #6 will cause the following screen to be displayed:

```
1=STANDARD ADJECTIVE
2=STANDARD NOUN
3=CUSTOM ADJECTIVE
4=CUSTOM NOUN
```

Pressing 1 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keyboard down arrow key must be pressed to see all the Adjective screens. Press the number corresponding to the adjective that is to be used as a descriptor for the location of the detector currently being programmed. When an adjective has been selected, it will appear at the top of the display as indicated by the asterisks.

```
1=NORTH
2=SOUTH
3=EAST
```

```
1=WEST
2=FRONT
3=CENTRE
```

```
1=REAR
2=UPPER
3=LOWER
```

```
1=MAIN
2=FIRST
3=2ND
```

```
1=FLOOR1
2=FLOOR2
3=FLOOR3
```

```
1=FLOOR4
2=FLOOR5
3=ROOM
```

Pressing 2 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keyboard down arrow key must be pressed to see all the Noun screens. Press the number corresponding to the noun that is to be used as a descriptor for the location of the detector currently being programmed. When a noun has been selected, it will appear at the top of the display as indicated by the asterisks.
Pressing 3 or 4 while viewing the Noun/Adjective Screen will display screens similar to the previous Adjective and Noun Screens. The new screens will list custom Adjectives and Nouns which have been programmed into the control panel using the FS-Tools utility. These descriptors are selected as described in the previous sections.

Description

The Description selection allows the programmer to enter additional information about the detector currently being programmed. This information will be displayed as part of the device label on the display. Pressing 2 while viewing Edit Detector Screen #5 will cause the following screen to be displayed:

A flashing cursor will appear at the first asterisk to the left. The programmer can enter additional descriptive information about the device being programmed. This information will appear on the display along with the standard device label information. A maximum of 20 characters (including spaces) can be entered. To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter B, press the (ABC) key three times to toggle through the characters 2, A and B. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the (QZ) key four times until a blank appears in the desired position. When all characters have been entered, press the Enter key to store the information. The display will return to the Edit Detector Screen #5, displaying the new information at the bottom of the screen.

Recall/Increment Function

In addition, the user may use the Recall/Increment function at any time when the cursor is on the first letter of the Description, Adjective or Noun field as follows:

- If the zero key is pressed, a 0 is placed in the first letter position
- If the zero key is then pressed a second time with no intervening key actions, the entire field is replaced with the field entered for the previous device programmed, and the cursor moves to the last character of the field (Recall function). The Recalled Adjective or Noun field may now be changed letter-by-letter
- If the zero key is pressed again with no other intervening key actions and the last character in the field is a number 0-9, the number is incremented by one. If the last character is a letter, it changes to a 0. If the last character is 9 it goes to 0
- The above increment function may be repeated with each press of the zero key

As an example, the user could quickly enter ‘FLR_3_ROOM_305’ as follows:
1. The cursor is on the first letter of the Adjective field. Press the zero key twice to display FLR_3
2. With the cursor on the first letter of the Noun field, press the zero key twice to recall the display ROOM_304. The cursor automatically jumps from the first to the last letter of the Noun field
3. With the cursor on the last letter of the Noun field, press the zero key again to increment the room number to 305
4. Press the right arrow key to advance the zone field
5. Select a zone number from 000 to 049. Z000 (default zone) is the general alarm zone. Z001 through Z049 may be selected to link software zones

Module Programming

Pressing 2, while viewing Point Program Screen #2, will allow the programmer to add, delete or change the programming of an addressable module. The following screen will be displayed by the control panel:
**Add Module**

Pressing 1 while viewing the Modules Screen will display the following screen which allows the programmer to add a new module address to programming:

![Add Module Screen #1](image1)

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit module address, such as 005.

When the last digit is keyed-in, the following screen will be displayed:

![Add Module Screen #2](image2)

Pressing 1 for Control Module, 2 for Wireless Control Module, 3 for Monitor Module, or 4 for Wireless Monitor Module will cause the following screen to be displayed:

![Add Module Screen #3](image3)

The programmer can continue adding modules by pressing the ESC or left arrow key which will return the display to the Add Module Screen #1.

**Delete Module**

Pressing 2 in the Modules Screen will display the Delete Module Screen which allows the programmer to delete a specific module:

![Delete Module Screen](image4)

A flashing cursor will appear in the position of the first asterisk to the left. Using the panel keypad, key in the module address such as 005. When the last digit is keyed in, the following confirmation that the module has been deleted will be displayed:

![Delete Module Screen](image5)

**Edit Module Screen for Monitor Module**

The programmer can change a module’s existing or factory default programming by pressing 3 in the Modules Screen. The following screen will be displayed:

![Edit Module Screen](image6)

A flashing cursor will appear in the position of the first asterisk to the left. The programmer keys in the three digit module address, such as 012. When the last digit is keyed-in, if the selected address has not been added to programming, a screen showing information about a device that is installed with a lower address, closest to the selected address, will be displayed. If no modules are installed on the loop, the following screen will be displayed:

![Edit Module Screen](image7)
If the selected address has been added to programming but a module (such as a monitor module) with the selected address is not physically installed on the SLC or has a communication fault, the following screen will be displayed:

![Trouble Monitor Screen](image)

If the selected address has been added to programming and a module (such as a monitor module) with the selected address is physically installed on the SLC and is communicating with the control panel, the following screen will be displayed:

![Normal Monitor Screen](image)

**To change the programming for the displayed module, press the keyboard down arrow key to view the following Edit Monitor screens.** In the preceding example:

- ✓ Normal - indicates that the module with the selected address is physically installed on the SLC and communicating with the control panel (enabled)
- ✓ <ADJ><NOUN> - represents the adjective and noun, which have been programmed, describing the location of the displayed device
- ✓ ZNNN - represents the first of five possible software zones that the module is assigned to (NNN = the three digit zone number from 000 - 049)
- ✓ 1M012 - represents the Loop, Device type and Device address (1 = SLC Loop, M = Module and 012 = Module Address 012)
- ✓ W or * - indicates whether or not the device is programmed for Walktest (W = programmed for walktest, * = not programmed for walktest).
- ✓ X or * - indicates whether or not the device is wireless (X = wireless, * = wired).

If the selected address corresponds to a control module, a screen displaying information about the control module with the selected address will be displayed as shown in “Edit Module Screen for Control Modules” on page 63.

If the selected address corresponds to a monitor module, a screen displaying information about the module with the selected address will be displayed as illustrated in the following:

![Edit Monitor Screen #2](image)

**Enable/Disable Module**

To Enable or Disable the monitor module, press the 1 key while viewing the Edit Module Screen #2. Each press of the key will toggle the screen between Enabled Yes and Enabled No. If Enabled No is selected, the module will not be polled by the control panel, preventing the module from reporting alarms and troubles to the panel. The control panel will indicate a system trouble condition and the Disable LED with turn on if any devices are disabled.

**Type Monitor**

Using the FS-Tools Upload/Download utility, unique user-defined monitor types can be created and loaded into the FACP for later use. The FACP response to the activation of a user-defined type is the same as most previous standard types in the list, thus allowing a variety of user-defined types and responses. To select the type of monitor module being programmed, press the 2 key while viewing the Edit Monitor Screen #2. This will cause the control panel to display the following Monitor Type Screens:

![Monitor Type Screen #1](image)

Pressing the down arrow key will display additional Monitor Type screens. While viewing one of the Monitor Type screens, select the type of monitor module being programmed by pressing the corresponding keypad number key. The display will return to the Edit Monitor Screen #2 which will show the new type selection.

Table 3.1 lists the Monitor Types and their respective functions.
Monitor module type selection will affect the function of the point as follows:

<table>
<thead>
<tr>
<th>Monitor Type</th>
<th>Action When Activated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pull-Station</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-1</td>
<td>same as previous (Pull-Station)</td>
</tr>
<tr>
<td>Waterflow</td>
<td>Fire Alarm Delayed</td>
</tr>
<tr>
<td>User-Defined-2</td>
<td>same as previous (Waterflow)</td>
</tr>
<tr>
<td>Monitor</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-3</td>
<td>same as previous (Monitor)</td>
</tr>
<tr>
<td>Future</td>
<td>not used</td>
</tr>
<tr>
<td>Future</td>
<td>not used</td>
</tr>
<tr>
<td>Smoke-Conventional</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-5</td>
<td>same as previous (Smoke-Conventional)</td>
</tr>
<tr>
<td>Heat Conventional</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>User-Defined-6</td>
<td>same as previous (Heat-Detector)</td>
</tr>
<tr>
<td>Medic Alert</td>
<td>General Purpose Signaling, latching</td>
</tr>
<tr>
<td>User-Defined-7</td>
<td>same as previous (Medic-Alert)</td>
</tr>
<tr>
<td>Hazard Alert</td>
<td>General Purpose Signaling, latching</td>
</tr>
<tr>
<td>User-Defined-8</td>
<td>same as previous (Hazard-Alert)</td>
</tr>
<tr>
<td>Tornado Alert</td>
<td>General Purpose Signaling, latching</td>
</tr>
<tr>
<td>User-Defined-9</td>
<td>same as previous (Tornado-Alert)</td>
</tr>
<tr>
<td>Phone</td>
<td>Active Phone (LCD display only)</td>
</tr>
<tr>
<td>User-Defined-10</td>
<td>same as previous (Phone)</td>
</tr>
<tr>
<td>Tamper</td>
<td>Supervisory, nonlatching (tracking)</td>
</tr>
<tr>
<td>User-Defined-11</td>
<td>same as previous (Tamper)</td>
</tr>
<tr>
<td>Supervisory</td>
<td>Supervisory, latching</td>
</tr>
<tr>
<td>User-Defined-12</td>
<td>same as previous (Supervisory)</td>
</tr>
<tr>
<td>Supervisory AR</td>
<td>Supervisory, nonlatching (tracking)</td>
</tr>
<tr>
<td>User-Defined-13</td>
<td>same as previous (Supervisory-AR)</td>
</tr>
<tr>
<td>HVAC OVRRIDE</td>
<td>Switch Supervisory, nonlatching (tracking)</td>
</tr>
<tr>
<td>Power Monitor</td>
<td>Power Fault</td>
</tr>
<tr>
<td>User-Defined-14</td>
<td>same as previous (Power Monitor)</td>
</tr>
<tr>
<td>Trouble Monitor</td>
<td>Trouble</td>
</tr>
<tr>
<td>User-Defined-15</td>
<td>same as previous (Trouble Monitor)</td>
</tr>
<tr>
<td>Process Monitor</td>
<td>General Purpose Signaling, latching</td>
</tr>
<tr>
<td>User-Defined 16</td>
<td>same as previous (Process-Monitor)</td>
</tr>
<tr>
<td>Process Monitor AR</td>
<td>General Purpose Signaling, nonlatching (tracking)</td>
</tr>
<tr>
<td>User-Defined-17</td>
<td>same as previous (Process-Monitor-AR)</td>
</tr>
<tr>
<td>Future</td>
<td>not used</td>
</tr>
<tr>
<td>Future</td>
<td>not used</td>
</tr>
<tr>
<td>Ack Switch</td>
<td>Acts like panel Acknowledge Key</td>
</tr>
<tr>
<td>Sil Switch</td>
<td>Acts like panel Silence Key</td>
</tr>
<tr>
<td>Reset Switch</td>
<td>Acts like panel Reset Key</td>
</tr>
<tr>
<td>Drill Switch</td>
<td>Acts like panel Drill Key</td>
</tr>
<tr>
<td>PAS Bypass</td>
<td>PAS Disable</td>
</tr>
<tr>
<td>HVAC RESTART</td>
<td>Switch (see note 2)</td>
</tr>
<tr>
<td>Drill Switch AR</td>
<td>Acts like panel Drill Key, non-latching (tracking)</td>
</tr>
<tr>
<td>Wireless Gateway</td>
<td>SWIFT gateway needs this type to display wireless troubles at the FACP</td>
</tr>
</tbody>
</table>

Table 3.1 Monitor Types

1 Combination systems employing these non-fire monitor types require the SLC loop to be programmed by the installer for Class B operation and isolator modules must be employed on each non-fire branch of the SLC as shown in the SLC Wiring Manual (document number 51309). Fire and non-fire devices must not be used on the same SLC branch. For UL2017 compliance, The ANN-LED annunciator must be used to indicate the active, dedicated zone or device
2 For entries ending in AR, AR refers to AutoResettable.
3 For HVAC RESTART and HVAC OVRRIDE descriptions, refer to “Monitor Module Operation” on page 143.
Pre-signal

To enable the Pre-signal feature, press 1 while viewing Edit Monitor Screen #3 until the display reads Pre-signal Yes. Each press of the 1 key will cause the display to toggle between Pre-signal Yes and Pre-signal No. Refer to “Pre-signal” on page 109 for additional information.

Wireless

The Wireless selection will update automatically if the system recognizes a wireless device. If the module is wireless, the display reads Wireless Yes. If the module is wired, the display will read Wireless No. For more information on the SWIFT wireless network, refer to the SWIFT manual, #LS10036-000FL-E.

Walktest

The Walktest feature allows one person to test the system devices without the necessity of manually resetting the control panel after each device activation. To enable devices, which are connected to a monitor module, for the Walktest feature, press 1 while viewing the Edit Monitor Screen #4 until the display reads Walktest Yes. Each press of the 1 key will cause the display to toggle between Walktest Yes and Walktest No. Refer to “Walktest” on page 110 for additional information.

Zone Assignment

A maximum of five zones can be programmed to each addressable monitor module. Pressing 2 while viewing Edit Monitor Screen #4 displays the following screen:

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the left. Enter the three digit number corresponding to the zone that is to be assigned to this device. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zones Z00. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Edit Monitor Screen #4.

Noun/Adjective

The Noun/Adjective selection allows the programmer to enter specific descriptors about the monitor module currently being programmed. Pressing 1 while viewing Edit Monitor Screen #5 will cause the following screen to be displayed:

Pressing 1 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keyboard down arrow key must be pressed to see all the Adjective screens. Press the number corresponding to the adjective that is to be used as a descriptor for the location of the monitor module currently being programmed.
Pressing 2 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keyboard down arrow key must be pressed to see all the Noun screens. Press the number corresponding to the noun that is to be used as a descriptor for the location of the monitor module currently being programmed.

Pressing 3 or 4 while viewing the Noun/Adjective Screen will display screens similar to the previous Adjective and Noun Screens. The new screens will list Custom Adjectives and Nouns which have been programmed into the control panel using the FS-Tools utility.

Description

The Description selection allows the programmer to enter additional information about the monitor module currently being programmed. This information will be displayed as part of the device label on the LCD display. Pressing 2 while viewing Edit Monitor Screen #5 will cause the following screen to be displayed:

A flashing cursor will appear at the first asterisk to the left. The programmer can enter additional descriptive information about the device being programmed. This information will appear on the LCD display along with the standard device label information.

A maximum of 20 characters (including spaces) can be entered. To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter B, press the 2 (ABC) key three times to toggle through the characters 2, A and B. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the * (QZ) key four times until a blank appears in the desired position. When all characters have been entered, press the Enter key to store the information. The display will return to the Edit Monitor Screen #4, displaying the new information at the bottom of the screen.

Recall/Increment Function

In addition, the user may use the Recall/Increment function at any time when the cursor is on the first letter of the Adjective or Noun field as follows:

- If the zero key is pressed, a 0 is placed in the first letter position
- If the zero key is then pressed a second time with no intervening key actions, the entire Adjective field is replaced with the field entered for the previous device programmed, and the cursor moves to the last character of the field (Recall function). The Recalled Adjective or Noun field may now be changed letter-by-letter
- If the zero key is pressed again with no other intervening key actions and the last character in the field is a number 0-9, the number is incremented by one. If the last character is a letter, it changes to a 0. If the last character is 9 it goes to 0
- The above increment function may be repeated with each press of the zero key

As an example, the user could quickly enter ‘FLR_3_ROOM 305’ as follows:
1. The cursor is on the first letter of the Adjective field. Press the zero key twice to display FLR_3
2. With the cursor on the first letter of the Noun field, press the zero key twice to recall the display ROOM_304. The cursor automatically jumps from the first to the last letter of the Noun field
3. With the cursor on the last letter of the Noun field, press the zero key again to increment the room number to 305
4. Press the right arrow key to advance the zone field
5. Select a zone number from 000 to 049. Z000 (default zone) is the general alarm zone. Z001 through Z049 may be selected to link software zones
Master Programming Level

Programming

Edit Module Screen for Control Modules

The programmer can change a module’s existing or factory default programming by pressing 3 in the Modules Screen. The following screen will be displayed:

![Edit Module Screen](image_url)

A flashing cursor will appear in the position of the first asterisk to the left.

The programmer keys in the three digit module address, such as 002. When the last digit is keyed-in, if the selected address corresponds to a control module, a screen displaying information about the control module with the selected address will be displayed as illustrated in the following:

![Edit Control Screen #1](image_url)

In the preceding example:

- Normal - indicates that the module with the selected address is physically installed on the SLC and communicating with the control panel (enabled)
- ugh.<ADJ><NOUN> - represents the adjective and noun, which have been programmed, describing the location of the displayed device
- Control - indicates that the selected module is a control module
- S or * - represents Silenceable (S) or Nonsilenceable (*)
- W or * - represents Waterflow Timer Delay (W = Waterflow Timer Delay enabled, * = Waterflow Timer Delay disabled)
- ZNNN - represents the first of five possible software zones that the module is assigned to (NNN = the three digit zone number from 000 - 049)
- 1M002 - represents the Loop, Device type and Device address (1=SLC Loop, M=Module and 002 = Module Address 02)

To change the programming for the displayed module, press the keyboard down arrow key to view the following Edit Control screens:

Edit Control Screen #2

![Edit Control Screen #2](image_url)

Enable/Disable Module

To Enable or Disable the control module, press the 1 key while viewing the Edit Control Screen #2. Each press of the key will toggle the screen between Enabled Yes and Enabled No. If Enabled No is selected, the module will not be polled by the control panel, preventing the module from activating its output devices. The control panel will indicate a system trouble condition and the Disable LED will turn on if any devices are disabled.

Control Type

To select the type of control module being programmed, press the 2 key while viewing the Edit Control Screen #2. This will cause the control panel to display the following Control Type Screens. Press the down arrow key to view additional screens and selections.

![Control Type Screen #1](image_url)

While viewing one of the Control Type screens, select the type of control module being programmed by pressing the corresponding keypad number key. The display will return to the Edit Control Screen #2 and indicate the new type selection.

NOTE: A control relay module set to the Resettable Power type will follow the main circuit board 24 VDC resettable power unless the control relay module is disabled.
Programming

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The following table contains control module type codes and their functions which are displayed in the Control Type screens:

<table>
<thead>
<tr>
<th>Control Type</th>
<th>Special Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell Circuit</td>
<td>NAC Type - supervised</td>
</tr>
<tr>
<td>Horn Circuit</td>
<td>NAC Type - supervised</td>
</tr>
<tr>
<td>Sounders</td>
<td>NAC Type - supervised</td>
</tr>
<tr>
<td>Relay</td>
<td>Ignore Open Circuit</td>
</tr>
<tr>
<td>Strobe Circuit</td>
<td>NAC Type - supervised</td>
</tr>
<tr>
<td>Control</td>
<td>NAC Type - supervised</td>
</tr>
<tr>
<td>Resettable Power 1</td>
<td>Relay Type - Ignore Open Circuit</td>
</tr>
<tr>
<td>HVAC Shutdown RLY 2</td>
<td>Relay Type - Ignore Open Circuit</td>
</tr>
<tr>
<td>HVAC Shutdown NAC 2</td>
<td>NAC Type - supervised</td>
</tr>
</tbody>
</table>

1 When using a control relay module to supply resettable power to conventional 2-wire smoke detectors, the addressable monitor module must be programmed for Smoke-Conventional operation.

2 For HVAC SHUTDOWN description, refer to “Control Module Operation” on page 142.

Silenceable

The Silenceable selection allows the programmer to select whether output devices connected to the control module can be silenced, either by pressing the Alarm Silence key or by enabling Autosilence. Pressing the 3 key while viewing Edit Control Screen #2 will enable the Silenceable feature causing the display to read Silenceable Yes. Repeated presses of the 3 key will cause the display to toggle between Silenceable Yes and Silenceable No.

Walktest

The Walktest feature allows one person to test the system devices without the necessity of manually resetting the control panel after each device activation. To enable devices, which are connected to a control module, for the Walktest feature, press 1 while viewing the Edit Control Screen #3 until the display reads Walktest Yes. Each press of the 1 key will cause the display to toggle between Walktest Yes and Walktest No. Refer to “Walktest” on page 110 for additional information.

Zone Assignment

A maximum of five zones can be programmed to each addressable control module. Pressing 2 while viewing Edit Control Screen #3 displays the following screen:

Zone Assignment Screen

Note that Z*** represents the Zone Number(s) corresponding to this device. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the left. Enter the three digit number corresponding to the zone that is to be assigned to this device. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zones Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the Edit Control Screen #3.

Noun/Adjective

The Noun/Adjective selection allows the programmer to enter specific descriptors about the control module currently being programmed. Pressing 1 while viewing Edit Control Screen #4 will cause the following screen to be displayed:
Pressing 1 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keyboard down arrow key must be pressed to see all the Adjective screens. Press the number corresponding to the adjective that is to be used as a descriptor for the location of the control module currently being programmed.

Pressing 2 while viewing the Noun/Adjective Screen will cause the following screen(s) to be displayed. Note that the keyboard down arrow key must be pressed to see all the Noun screens. Press the number corresponding to the noun that is to be used as a descriptor for the location of the control module currently being programmed.

Pressing 3 or 4 while viewing the Noun/Adjective Screen will display screens similar to the previous Adjective and Noun Screens. The new screens will list Custom Adjectives and Nouns which have been programmed into the control panel using the FS-Tools programming utility.

Description
The Description selection allows the programmer to enter additional information about the control module currently being programmed. This information will be displayed as part of the device label on the display. Pressing 2 while viewing Edit Control Screen #4 will cause the following screen to be displayed:

A flashing cursor will appear at the first asterisk to the left. The programmer can enter additional descriptive information about the device being programmed. This information will appear on the display along with the standard device label information.

Recall/Increment Function
In addition, the user may use the Recall/Increment function at any time when the cursor is on the first letter of the Adjective or Noun field as follows:

- If the zero key is pressed, a 0 is placed in the first letter position.
- If the zero key is then pressed a second time with no intervening key actions, the entire Adjective field is replaced with the field entered for the previous device programmed, and the cursor moves to the last character of the field (Recall function). The Recalled Adjective or Noun field may now be changed letter-by-letter.
- If the zero key is pressed again with no other intervening key actions and the last character in the field is a number 0-9, the number is incremented by one. If the last character is a letter, it changes to a 0. If the last character is 9 it goes to 0.
• The above increment function may be repeated with each press of the zero key. As an example, the user could quickly enter ‘FLR_3 ROOM 305’ as follows:

1. The cursor is on the first letter of the Adjective field. Press the zero key twice to display FLR_3.
2. With the cursor on the first letter of the Noun field, press the zero key twice to recall the display ROOM_304. The cursor automatically jumps from the first to the last letter of the Noun field.
3. With the cursor on the last letter of the Noun field, press the zero key again to increment the room number to 305.
4. Press the right arrow key to advance the zone field.
5. Select a zone number from 000 to 049. Z000 (default zone) is the general alarm zone. Z001 through Z049 may be selected to link software zones.

Control Module Delay

The control module delay feature, if enabled, will delay activation after being triggered by an alarm condition. Pressing 2 while viewing Edit Control Screen #5 will cause the display to change from the factory default of Ctrl Mod Dly No to Ctrl Mod Dly Yes. Each press of the 1 key will cause the display to toggle between the two options. Delay time varies from 0-180 seconds. See “Control Module Delay” on page 73 to set the delay time. The control module must first be set to Silenceable No to enable the Delay Timer.

Wireless

The Wireless selection will update automatically if the system recognizes a wireless device. If the module is wireless, the display reads Wireless Yes. If the module is wired, the display will read Wireless No.

3.6.3 Zone Setup

Pressing 3 while viewing Programming Screen #2 will access the Zone Setup screens as illustrated below:

Enable

Pressing 1 for Enable, while viewing Zone Setup Screen #1, will display the following screen:

This screen allows the programmer to enable zones, one at a time. A flashing cursor appears next to the Z, prompting the programmer to enter a three digit zone number (001 - 049). When the third digit is entered, the zone will be enabled and the cursor returns to the original position next to the Z. Another zone can then be enabled.

Disable

Pressing 2 for Disable, while viewing Zone Setup Screen #1, displays the following:

This screen allows the programmer to disable zones, one at a time. A flashing cursor appears next to the Z, prompting the programmer to enter a three digit zone number (001 - 049). When the third digit is entered, the zone will be disabled and the cursor will return to the original position next to the Z. Another zone can then be disabled.

Special Purpose Zone

Pressing 3 for Special Purpose, while viewing Zone Setup Screen #1, will display the following screens:
Zones 047, 048, 049, and 046 can be programmed for normal zone operation or for special purpose applications. In the above illustration, the four zones are shown Off, which means they can be programmed to function in the same manner as all other zones, by assigning them to input and output devices in the Programming Zone Assignment Screen.

Pressing 1 will cause the display to change to PAS 47 On. Each press of the 1 key will cause the display to toggle between PAS 47 On and PAS 47 Off. When Zone 047 is programmed On, a PAS (Positive Alarm Sequence) activation of any smoke detector will cause Zone 047 to activate. By assigning Zone 047 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a PAS condition in the control panel. Do not assign Zone 047 to a Notification Appliance Circuit when using this zone to indicate a PAS condition. Attempting to do so will generate an error message and will be prevented by software checks.

Pressing 2 will cause the display to change to Pre-signal 48 On. Each press of the 2 key will cause the display to toggle between Pre-signal 48 On and Pre-signal 48 Off. When Zone 048 is programmed On, a Pre-signal activation of any device will cause Zone 18 to activate. By assigning Zone 048 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a Pre-signal condition in the control panel. Do not assign Zone 048 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition. Attempting to do so will generate an error message and will be prevented by software checks.

Pressing 3 will cause the display to change to Two Stage 49 On. Each press of the 3 key will cause the display to toggle between Two Stage 49 On and Two Stage 49 Off. Refer to “Two Stage Operation” on page 75 for a description of this feature.

Pressing 1 while viewing the Special Purpose Zone Screen #2 will cause the display to change to Local Alm 46 On. Each press of the 1 key will cause the display to toggle between Local Alm 46 On and Local Alm 46 Off. When Zone 46 is programmed On, a Local Alarm activation of any smoke detector will cause Zone 046 to activate. By assigning Zone 046 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a local alarm condition in the control panel. Local Alarm Zone alarms are not reported to the Central Station.

Zones Installed

Pressing 1 for Zones Installed, while viewing Zone Setup Screen #2, will display a screen similar to the following:

```
ZONES INSTALLED
000 001 002 003 004
005
```

This display will show all of the zones that have been programmed into the control panel. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view the additional zones.

Zones Enabled

Pressing 2 for Zones Enabled, while viewing Zone Setup Screen #2, will display a screen similar to the following:

```
ZONES ENABLED
000 001 002 004 005
006 007 008 009 010
011 012 013 014
```

This display will show all of the zones that are enabled in the control panel. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view the additional zones.

Zones Disabled

Pressing 3 for Zones Disabled, while viewing Zone Setup Screen #2, will display a screen similar to the following:

```
ZONES DISABLED
003
```

This display will show all of the zones that are disabled in the control panel. Note that an up and/or down arrow may appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view the additional zones.
Programming

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Zone Setup

Zone Types must be programmed only if a Communicator, programmed for zone reporting, is installed on the control panel. Pressing 1 for Zone Types, while viewing Zone Setup Screen #3, will display a screen similar to the following:

```
ZONE TYPE PROG
1=Z000 MONITOR
2=Z001 MONITOR
3=Z002 MONITOR
```

This display will show the system zones (default and user programmed) and their associated types. Note that an up and/or down arrow will appear in the upper right corner of the display, indicating that additional screens of zone information exists. Press the up or down arrow keys to view zones Z000 through Z049.

Zone types can be changed by pressing the keypad number key corresponding to the zone in each Zones Installed Screen. Available zone types will be displayed in the resultant screens. For example, to change the zone type for zone Z002 in the screen illustrated above, press 3. The following screens will be displayed:

```
ZONE TYPE PROG
1=MONITOR
2=SMOKE PHOTO
3=WATERFLOW
```

To change the zone type for Z002 to Pull Station, scroll the display until Zone Type Program Screen #2 is displayed. Press 2 to program zone Z002 as a Pull Station zone. The display will return to the Zones Installed Screen showing zone Z002 and the Pull Station program type. Repeat the procedure for each zone to be changed.

**IMPORTANT!** In Zone Type Program Screen #1, selecting WATERFLOW will assign a Waterflow silenceable zone type to the selected zone. Any signaling devices programmed to the same zone can be silenced by pressing the Alarm Silence key or by using the auto-silence feature.

To program a waterflow circuit as nonsilenceable, refer to “System Setup” on page 69.

### Zones Available

```
ZONES AVAILABLE
001 002 003 004 005
006 007 008 009 010
011 012 013 014
```

The display will show all of the zones that are still available for programming.

#### 3.6.4 Loop Setup

Loop Setup allows the programmer to configure the SLC Loop for NFPA Class A or B wiring and to select the loop protocol. Pressing 1 while viewing Programming Screen #2 will cause the following screen to be displayed:

```
LOOP SETUP
1=CLASS
2=PROTOCOL LITESPEED
```
Class
To program the SLC Class for the selected loop, press 1 for Class, while viewing Loop Setup Screen. In the preceding example, the control panel is programmed for Class B SLC wiring as indicated by the B to the right of Class in the display. To change the wiring style, press 1 to toggle the display to read Class A. Each press of the 1 key will cause the display to toggle between Class B and Class A.

**NOTE:** If the FACP reports an open fault on an SLC Loop programmed for Class A, the trouble condition will latch at the FACP. When the SLC Loop has been repaired, the Reset button must be pressed at the FACP (at least 2 minutes after the trouble has been repaired) to clear the SLC trouble.

Loop Protocol
Loop Protocol refers to the SLC loop mode of operation. Refer to “Wire Requirements” on page 140 for wire specifications based upon SLC protocol. There are two Loop Protocols available:

- CLIP (Classic Loop Interface Protocol) - which is used for the older legacy addressable devices such as the M300 Series modules and detectors.
- LiteSpeed (factory default setting) - used for the 350 Series or newer addressable devices for quicker response times. Note that the legacy devices can operate only in CLIP mode while the newer devices are compatible with CLIP and LiteSpeed modes of operation.

Pressing 2 while viewing the Loop Setup Screen will toggle between CLIP and LiteSpeed Protocols.

Device Addressing
It is important to note that the ES-50X addressable device capacity is 50 detectors and control/monitor modules. Addressable devices must not be set to addresses higher than 50. Programming will not allow addresses higher than 50.

Note that it is permissible to mix old and new devices on the same loop but the FACP must be set for CLIP mode when older devices are installed.

3.6.5 System Setup
System Setup allows the programmer to configure the following control panel features:

- **Function Keys**: This feature allows the user to rapidly enable/disable various fire panel inputs and outputs during scheduled maintenance.
- **Banner**: This option allows the user to change the top two lines of the LCD display from the blank factory default readout to a user defined readout when the control panel is in Normal condition.
- **Time-Date**: This feature allows the programmer to set the time, display format (24 hr or 12 hr), date and daylight savings time feature into the FACP memory.
- **Timers**: This option allows the programmer to set the PAS (Positive Alarm Sequence) time delay, Pre-Signal time delay and Waterflow time delay.
- **NACs**: This feature allows the programmer to configure the control panel Notification Appliance Circuits for a variety of options, such as circuit type, silenceable/nonsilenceable, autosilence, coding, silence inhibit, zone assignment and enable/disable.
- **Relays**: This option allows programming of two onboard relays for activation by various control panel events, such as alarm, trouble, supervisory, etc.
- **Canadian Option**: This option allows the programming of certain options to Canadian specifications.
- **Waterflow Silenceable**: This option provides the ability to silence any output circuit activated by a monitor module programmed as a water type.
- **Auxiliary Power**: This option configures the use of the 24VDC auxiliary power output at TB11 on the FACP.
- **Trouble Reminder**: This option provides an audible reminder that an alarm or trouble still exists on the FACP after the control panel has been silenced. The control panel piezo sounder will pulse once every 15 seconds during an alarm and every two minutes during a trouble condition, after the Alarm Silence or Acknowledge key is pressed. The piezo will continue to sound at these rates until the alarm or trouble condition is cleared. If the trouble condition is not cleared within a selected time of either 4 or 24 hours, the panel will reactivate the trouble sounder and retransmit the trouble condition to the central station if connected. When used with SWIFT wireless devices, the Trouble Reminder must be set to 4 hours.
- **Language**: This option allows the user to switch between English and French language text on the panel display.
- **Charger Enable**: This option allows the user to install an external battery charger.
- **4XTM Supervision**: This feature enables supervision of an installed 4XTMF Transmitter Module.
- **Remote Sync Enable**: This feature controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time.
Function Keys

The ES-50X keypad has 4 programmable function keys. These keys can be programmed to allow rapid disable/enable of various fire panel inputs and outputs during scheduled maintenance. Pressing any function key results in a trouble signal at the panel. Pressing 1 on System Setup Screen #1 displays the following:

```
1=F1  3=F3
2=F2  4=F4
```

Select 1, 2, 3, or 4 to program the corresponding Function Key. The following screens display for each Function Key where “(X)” represents the number of the key chosen.

```
F(X) KEY OPERATION
1=KEY ENABLED   NO
2=ZONES
3=ALL ZONES
```

To Enable or Disable the Function Key, press the 1 key while viewing the Function Keys Screen #1. Each press of the key will toggle the screen between Key Enabled Yes and Key Enabled No.

Pressing 2 key while viewing the Function Keys Screen #1 allows the user to select individual zones that the Function Key will control. Pressing 3 assigns all zones to the selected Function Key.

Each function key can be assigned to control any of the 2 onboard NAC circuits on the ES-50X. By pressing the 2 key while viewing the Function Keys Screen #2 the following screen displays, allowing the user to select the desired NAC circuit(s).

```
F(X) NACS
1=NAC 1  N   2=NAC 2 Y
```

Pressing 1 or 2 toggles the screen between Yes (controlled by function key) and No (not controlled by function key) for each onboard NAC circuit.

The Remote Synchronization (TB8 on the FACP’s main circuit board) can also be disabled through programming of a function key. To disable remote synchronization, press the 3 key while viewing the Function Keys Screen #2. Each press of the key will toggle the screen between Rem Sync Disb Yes and Rem Sync Disb No.

Banner

The top line of the display, which appears when the control panel is in normal mode, can be changed by using the Banner option. Pressing 2 while viewing System Setup Screen #1 will cause the following to be displayed:

```
1=FACTORY
2=USER DEFINED
```
Pressing 1 while viewing the Banner Screen will select the blank factory default banner setting and display the following screen:

Factory Banner Screen

Pressing the Enter key will store this selection in nonvolatile memory and return the display to the Banner Screen.

Pressing 2 while viewing the Banner Screen will cause the following screens to be displayed:

User Defined Banner Screen #1

User Defined Banner Screen #2

These screens allow the programmer to enter a two line custom banner. A flashing cursor will appear in the bottom left corner of each display. A maximum of 20 characters (including spaces) can be entered into each screen for a total of two lines with 40 characters. After entering up to 20 characters in the first screen, press Enter to view the second screen. Enter up to 20 characters in the second screen in the same manner or just press Enter if a second banner line is not being entered. To quickly clear the current banner, press the CLR key.

To enter alphanumeric characters from the keypad, repeatedly press the appropriate key until the desired character is displayed in the first position. For example, to enter the letter B, press the 2 (ABC) key three times to toggle through the characters 1, A, and B. Press the right arrow key to move the cursor one position to the right and repeat the process to enter the next character. To enter a space, press the 9 (YZ) key four times to place a blank in the desired position. When all characters have been entered, press the Enter key to store the information. The display will return to the Banner Screen.

Time-Date

The control panel time and date can be changed by pressing 3 while viewing the System Setup Screen #1. The following screen will be displayed:

Time-Date Screen #1

Time-Date Screen #2

■ Time

To change the time, press 1 while viewing the Time-Date Screen. The following screen will be displayed:

Time Screen

A flashing cursor is located toward the top left of the display. Below the cursor is the current time. To change the time, enter the two-digit hours followed by the two-digit minutes. The cursor will move one position to the right each time a digit is entered. After the last minutes digit is entered, the cursor will again move one position to the right. At this point enter 1 for AM or 2 for PM. The display will then return to the Time-Date Screen which will show the new time entry. If an error is made while entering a digit, press the CLR key to delete the entire entry and beginning again.

■ Date

To change the date, press 2 while viewing the Time-Date Screen. The following screen will be displayed:

Date Screen

A flashing cursor is located toward the top left of the display. Below the cursor is the current date. To change the date, enter the two-digit month followed by the two-digit day and then the two-digit year (17 for 2017, 18 for 2018, etc.). The cursor will move one position to the right each time a digit is entered. After the last year digit is entered, the display will return to the Time-Date Screen which will show the new date entry. If an error is made while entering a digit, press the CLR key to delete the entire entry and beginning again.
Clock Format
The clock can be configured to display 12 hour (AM & PM) or 24 hour (military) time. Pressing 3 while viewing the Time-Date screen will cause the display to toggle between 12HR and 24HR. Select 12HR for 12 hour display or 24HR for 24 hour display.

NOTE: If the clock is changed to 24 hour (military) format, the date will change to the European standard of Day-Month-Year (for display purposes only).

Daylight Savings Time
Pressing 1 while viewing Time-Date Screen #2 will cause the following screens to be displayed:

1=DAYLIGHT SAVINGS
Time & Date Screen #2

1=ENABLED
2=START MONTH
3=START WEEK

Daylight Savings Screen #1

1=END MONTH
2=END WEEK

Daylight Savings Screen #2

Pressing 1 while viewing Daylight Savings Screen #1 will cause the display to toggle between Enabled Yes and Enabled No. The control panel will automatically update the time for daylight savings time when Enabled Yes is selected.

Pressing 2 while viewing Daylight Savings Screen #1 will display another screen which allows the programmer to select the month that daylight savings time will begin. In this sub-screen, pressing 1 will select March, 2 will select April, and 3 will select May.

Pressing 3 while viewing Daylight Savings Screen #1 will display two sub-screens which allow the programmer to select the week of the month that daylight savings time will begin. In the first sub-screen, pressing 1 will select the first week, 2 will select the second week and 3 will select the third week, while in the second sub-screen, pressing 1 will select the fourth week and 2 will select the last week of the selected month.

Pressing 1 while viewing Daylight Savings Screen #2 will display another screen which allows the programmer to select the month that daylight savings time will end. In this sub-screen, pressing 1 will select September, 2 will select October, and 3 will select November.

Pressing 2 while viewing Daylight Savings Screen #2 will display two sub-screens which allow the programmer to select the week of the month that daylight savings time will end. In the first sub-screen, pressing 1 will select the first week, 2 will select the second week and 3 will select the third week, while in the second sub-screen, pressing 4 will select the fourth week and 5 will select the last week of the selected month.

Timers
Timer delays for PAS, Pre-signal and workflow activation can be programmed by pressing 1 while viewing System Setup Screen #2. The following screen will be displayed:

1=TIMERS
2=NAC

System Setup Screen #2

1=PAS DELAY 000
2=PRE SIGNAL 000
3=WATERFLOW 000

Timer Screen #1

1=AC LOSS DELAY 2
2=CTRL MOD DLY 000

Timer Screen #2

PAS (Positive Alarm Sequence) Delay
The factory default setting for PAS is 000 for no delay. To select a PAS delay of 001 to 180 seconds for all devices programmed for PAS, press 1 while viewing Timer Screen #1. The following display will appear:

PAS DELAY
RANGE 0-180 SECONDS

PAS Delay Screen

A flashing cursor is positioned in the lower left corner of the display. Enter a delay time consisting of three digits, such as 005 for five seconds. Upon entering the third digit, the time delay will be stored in the control panel memory and the display will return to the Delay Screen which will indicate the new delay time.

Pre-signal Delay
The factory default setting for Pre-signal delay is 000 for no delay. To select a Pre-signal delay of 001 to 180 seconds for all devices programmed for Pre-signal, press 2 while viewing Timer Screen #1. The following screen will be displayed:

PRE SIGNAL DELAY
RANGE 0-180 SECONDS

Pre-signal Delay Screen

A flashing cursor is positioned in the lower left corner of the display. Enter a delay time consisting of three digits, such as 009 for nine seconds. Upon entering the third digit, the time delay will be stored in the control panel memory and the display will return to the Delay Screen which will indicate the new delay time.
Note that the FACP allows programming for PAS and Pre-signal timers, but a detector can only be programmed for either PAS or Pre-signal operation. Refer to “Edit Detector” on page 52 for programming details.

## Waterflow Delay

A delay can be added prior to declaring a waterflow type of alarm. Be careful to include any built-in delays of the waterflow device. The factory default setting for Waterflow delay is 000 for no delay. To select a Waterflow delay of 01 to 90 seconds for all devices programmed for Waterflow delay, press 3 while viewing Timer Screen #1. The following screen will be displayed:

![Waterflow Delay Screen](image)

A flashing cursor is positioned in the lower left corner of the display. Enter a delay time consisting of two digits, such as 25 for twenty-five seconds. Upon entering the second digit, the time delay will be stored in the control panel memory and the display will return to the Delay Screen which will indicate the new delay time.

## AC Loss Delay

The reporting of a loss of AC power to a central station can be delayed by programming the length of the desired delay. The factory default setting is 2 hours. Press 1 while viewing Timer Screen #2 to display the following:

![AC Loss Delay Screen #1](image)

Pressing 1 while viewing AC Loss Delay Screen #1 will program the FACP to transmit an AC Loss report immediately to the central station.

Pressing 2 while viewing AC Loss Delay Screen #1 will display the following:

![AC Loss Delay Screen #2](image)

A flashing cursor will appear in the lower left corner of the display. Type the two digit AC loss reporting delay in hours (00 to 23 hour delay). When the second digit is entered, the display will return to AC Loss Delay Screen #1. Refer to the table on page 47 for permissible settings.

**NOTE:** Upon the loss of AC power at the control panel, relays programmed for ‘AC Loss’ will transfer immediately, regardless of the AC Loss Delay setting. If no trouble exists at the panel other than AC Loss, the System Trouble relay will delay its activation for the duration of the AC Loss Delay setting.

## Control Module Delay

The control module delay feature, if enabled, will delay activation of a control module after being triggered by an alarm condition. Pressing 2 while viewing Timer Screen #2 will display the following:

![Control Module Delay Screen](image)

A flashing cursor will appear in the lower left corner of the display. Type the three digit control module delay in seconds (000 to 180 second delay). When the third digit is entered, the display will return to the Delay Screen which will indicate the new delay time. Refer to the table on page 47 for permissible settings.

## NACS (Notification Appliance Circuits)

The options for the NACs on the control panel main circuit board can be configured by pressing 2 while viewing System Setup Screen #2. The following screens will be displayed:

![NAC Selection Screen](image)
The Notification Appliance Circuits can be configured independently by pressing 1 for NAC 1 or 2 for NAC 2.

The following screens will be displayed for each selection:

- **Enabled**

  Pressing 1 while viewing NAC Screen #1 will cause the display to change to Enabled No. This will prevent the selected main circuit board NAC from activating its devices. Each press of the 1 key will cause the display to toggle between Enabled Yes and Enabled No.

  **NOTE:** The programming for NAC 1 will determine the operation of the remote power supply sync.

- **Type**

  The main circuit board NAC type can be programmed by pressing 2 while viewing NAC Screen #1. The following screen will be displayed. Press the down arrow key to view additional screens:

  ![NAC Screen #1](image)

  Select the NAC device type by pressing the number corresponding to the type in the appropriate screen. When the selection is made, the display will return to NAC Screen #1.

  The following table contains NAC type codes and their functions:

<table>
<thead>
<tr>
<th>NAC Type Code</th>
<th>Special Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell</td>
<td>None</td>
</tr>
<tr>
<td>Horn</td>
<td>None</td>
</tr>
<tr>
<td>Strobe</td>
<td>None</td>
</tr>
<tr>
<td>Synced Strobe</td>
<td>Synchronized to manufacturer</td>
</tr>
<tr>
<td>Strobe Sil Sync</td>
<td>Same as Synced Strobe but Silence turns off audible &amp; visual devices</td>
</tr>
<tr>
<td>Future Use</td>
<td>None</td>
</tr>
<tr>
<td>Future Use</td>
<td>None</td>
</tr>
<tr>
<td>Blank</td>
<td>None</td>
</tr>
</tbody>
</table>

- **Silenceable**

  Pressing 3 while viewing NAC Screen #1 will cause the display to change to Silenceable No. This will prevent the selected main circuit board NAC from being silenced by pressing the Alarm Silence key or by the Auto Silence feature. Each press of the 3 key will cause the display to toggle between Silenceable Yes and Silenceable No.

  **Important:** When a Notification Appliance Circuit with a mix of audible and visual devices is programmed for silenceable and the Synced Strobe feature is selected, only the audible devices will be turned off if the Silence key is pressed or if the Autosilence feature is enabled. The visual devices (strobes, etc.) will continue to operate. If the Strobe Sil Sync feature is selected, Silence or Autosilence will turn off both audible and visual devices.

- **Auto Silence**

  The Auto Silence feature, when enabled, automatically silences all main circuit board silenceable notification appliances after a programmed length of time. To enable this feature and program the time delay before Auto Silence activation, press 1 while viewing NAC Screen #2. The following screens will be displayed:

  ![Auto Silence Screen #1](image)

  ![Auto Silence Screen #2](image)

  ![Auto Silence Screen #3](image)
To disable the Auto Silence feature, press 1 for No while viewing Auto Silence Screen #1. To enable the Auto Silence feature, press the number corresponding to the time delay which will elapse before Auto Silence activates. This information will be stored in memory and the display will return to NAC Screen #2.

**NOTE:** All silenceable control modules as well as the remote power supply sync will be controlled by the Autosilence timer for NAC 1.

### Coding (only for NACs not programmed as Sync Strobe Type)

The Coding feature allows the programmer to select the type of output that the main circuit board notification appliances will generate when activated. Pressing 2 while viewing NAC Screen #2 will cause the following displays to appear:

![Coding Screen #1](image1)

![Coding Screen #2](image2)

![Coding Screen #3](image3)

The programmer can select the notification appliance output by pressing the number corresponding to the desired output. The coding selections are:

- Steady - a continuous output with no coding
- March Time - 120 ppm (pulse-per-minute) output
- California - 10 seconds on and 5 seconds off
- Temporal 3 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, ½ Seconds Off
- Temporal 4 - ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, ½ Second Off, ½ Second On, ½ Seconds Off
- Two Stage - refer to, "Two Stage Operation" below for a description

Selection of one of the above options will cause the control panel to store the information in memory and return the display to NAC Screen #2, which will display the new coding choice.

### Two Stage Operation

Two Stage operation consists of the following:

- 1st stage output - 20 ppm (pulse-per-minute) coding
- 2nd stage output - Temporal coding as described above
- F2 button functions as the two stage advance to stage two button
- F3 button functions as the automatic alarm signal cancel button

If Two Stage operation is programmed as the Coding option, the following sequence of events will occur during an alarm.

1. The on-board NACs which are programmed to General Alarm Zone 000 will activate with a 1st stage output upon activation of any alarm point.
2. If the activated alarm point is directly mapped to a zone which is programmed to an on-board NAC, that NAC will go directly to 2nd stage coding output. All other NACs not directly mapped to the activated alarm point’s zone but assigned to Zone 000 will activate with a 1st stage output.
3. If, after the programmed time of 3 or 5 minutes, the Acknowledge switch has not been pressed, all NACs presently in 1st stage activation will go to 2nd stage activation.
4. If an F3 switch has been pressed, the Alarm LED will turn from flashing to steady. Any NACs currently in 1st stage activation will remain in 1st stage. Pressing the Acknowledge switch does not affect NACs already in 2nd stage activation.
5. If an F2 button is pressed, the NACs will progress to the second stage.
6. If another alarm point is activated and the countdown timer is counting, the alarm point will have no effect on the NACs unless the alarm point’s zones are directly mapped to one of the NACs, in which case it will follow the procedure outlined in step 2.
7. If another alarm point is activated and the countdown timer has stopped counting due to the Acknowledge switch being pressed, the countdown timer will restart and the NACs will respond as outlined in step 2. NACs that are already in 2nd stage activation will not be affected.
8. Any control modules assigned to special Zone 049 will be activated either by direct mapping of an input device programmed to Zone 049 or if the timer counts down to zero or when any NAC goes into 2nd stage coding.
9. Control modules that are programmed to the same zone as the activated input device will not be delayed for activation.

### Zone

A maximum of five zones can be programmed to each main circuit board NAC. Pressing J while viewing NAC Screen #3 displays the following screen:

![Zone Assignment](image4)
Note that Z*** represents the Zone Number(s) corresponding to the selected NAC. The factory default for an unprogrammed device is Z000 for general alarm zone. A flashing cursor will appear on the first 0 to the left. Enter the three digit number corresponding to the zone that is to be assigned to this NAC. The cursor moves to the next Z*** designation. Continue entering zone assignments or the remaining zones can be left blank or programmed as general alarm zone Z000. When all desired changes have been made, press the Enter key to store the zone assignments. The display will return to the NAC Screen #3 which will show the zone assignments just entered.

### Silence Inhibit

The Silence Inhibit feature, when enabled, prevents the silencing of the selected main circuit board NAC for a period of five minutes. Resetting the FACP will also be prevented for one minute while the NAC programmed for silence inhibit is activated. Pressing 2 while viewing NAC Screen #3 will cause the display to change from the factory default of Silence Inhibit No to Silence Inhibit Yes. Each press of the 2 key will cause the display to toggle between the two options.

### Sync Type

If synchronized strobes were selected as the Type of device installed, the type of synchronization must be selected in this option. Pressing 1 while viewing NAC Screen #4 will cause the following screen to be displayed:

```
NAC Sync Type
1=System Sensor
2=Wheelock
3=Gentex
```

Pressing 1 while viewing this screen will select System Sensor synchronization, 2 will select Wheelock, and 3 will select Gentex.

### Maximum Number of Strobes for Synchronization

The total current draw for each Notification Appliance Circuit cannot exceed 2.5 amps. Refer to the manufacturer’s documentation supplied with the Strobes to determine the maximum current draw for each strobe and ensure that the circuit maximum is not exceeded. To ensure proper strobe and circuit operation, there is also a limit to the number of strobes that can be attached to each circuit.

### Relays

Pressing 3 while viewing System Setup Screen #2 will allow the programmer to configure two main circuit board Form-C relays from the following screen:

```
RELAYS
1=RELAY 1
2=RELAY 2
3=RELAY 3
```

To program Relay 1 or Relay 3, press the number corresponding to the selected relay. Note that Relay 2 is fixed as a Trouble relay. Selecting Relay 2 will have no effect on its programming. The following screen will appear for each relay to be programmed:

```
RELAY #
1=TYPE
2=ALARM
3=SUPERVISORY
4=SUPERVISORY AR
```

Pressing 1 for Type while viewing the Relay Screen will cause the following screens to be displayed:

```
RELAY
1=ALARM
2=SUPERVISORY
3=SUPERVISORY AR
```

While viewing the selected screen, press the number corresponding to the desired relay type to program the main circuit board relay. The choice will be stored in memory and the display will return to the Relay Type Screen which will show the programmed type choice. Press the Escape key to return to the Relays Selection Screen and repeat the preceding procedure for the remaining relays.

---

**NOTE:**

1. AR (AutoResettable) in SUPERVISORY AR and PROC_MON AR means that a relay with the Supervisory and/or Process Monitor type code, when activated, will automatically reset when the corresponding condition is cleared.

2. A relay programmed with the Silenceable Alarm type will activate upon any alarm and deactivate when the FACP Alarm Silenced LED is illuminated.
**Canadian Option**

Pressing 1 while viewing System Setup Screen #3 will configure the FACP to comply with Canadian requirements. The display will change to Canadian Opt. On. Each press of the 1 key will cause the display to toggle between Canadian Opt. On and Canadian Opt. Off. Refer to the table on page 47 for permissible settings.

**Important!** For Canadian Applications, this option must be set to ON prior to any other panel programming.

The Canadian Option configures the FACP with the following as required by Canada:

- The following monitor module type codes are **not** available:
  - monitor
  - non-latching supervisory
  - non-latching drill
  - non-latching process monitor
  - process monitor
  - hazard
  - tornado
  - medical alert

- The auto-silence timer is fixed at 20 minutes and cannot be changed.
- Addressable ionization smoke detector sensitivity is automatically monitored using Canadian specifications.
- The Positive Alarm Sequence and Pre-Signal option are not available for Canadian applications.
- The F1 function key is automatically configured to perform a manual alarm signal activation when pressed.
- The F2 function key is automatically configured to perform a two-stage bypass when pressed.
- If NACs are set up for two-stage operation, the Silence Inhibit timer is automatically enabled and is fixed at 5 minutes.
- AlarmNet supervision settings are fixed at 3 minutes and cannot be changed regardless of supervision programming selection.

**Waterflow Silenciable**

Pressing 2 while viewing System Setup Screen #3 will allow the programmer to configure the system for silenceable on nonsilenceable waterflow circuits. Each press of the 2 key will toggle the display between Waterflow Sil. No and Waterflow Sil. Yes. When Waterflow Sil. No is selected, all output devices associated with a waterflow type input device, will be nonsilenceable. When Waterflow Sil. Yes is selected, all output devices associated with a waterflow type input device, will be silenceable.

**Auxiliary Power**

A Special Application 24 VDC power output is available at TB11 on the main circuit board. Pressing 1 while viewing System Setup Screen #4 displays the following:

Select the AUX 1 output. The following screen will be displayed.

Aux 1 can be programmed for Class A wiring. If Aux 1 is to be wired for Class A, press 1. Each press of the 1 key will cause the display to toggle between Class A Yes and Class A No.

In addition, the aux power output can be programmed as resettable or non-resettable power. Non-resettable power is suitable for powering annunciators while resettable power is suitable for powering smoke detectors. Each press of the 1 key will cause the display to toggle between Resettable Yes and Resettable No.

**Trouble Reminder**

The Trouble Reminder features causes the control panel piezo to sound a reminder ‘beep’ for alarms and troubles, after the panel has been silenced. Refer to “Trouble Reminder” on page 69, for a detailed description of this feature. Pressing 2 while viewing System Setup Screen #4 will cause the display to toggle to Trouble Rem 4 or Trouble Rem 24, which enables this feature for resound at either 4 or 24 hours, respectively. Each press of the 2 key will cause the display to toggle between Trouble Rem 4 or Trouble Rem 24. Refer to the table on page 47 for permissible settings.
### Language

The language option is used to change the text on the panel display to either English or French. Pressing the 3 key will cause the display to offer a choice of 1=English and 2=French.

### Charger Enable

If using an external battery charger, the FACP battery charger must first be disabled. Pressing 1 while viewing System Setup Screen #5 will cause the display to toggle to Charger Enab No, which will allow the use of an external battery charger. Each press of the 1 key will cause the display to toggle between Charger Enab. No and Charger Enab. Yes.

### 4XTMF Supervision

If a 4XTMF Transmitter Module is installed in the system, supervision must enabled in user programming. Pressing 2 while viewing System Setup Screen #5 will cause the display to toggle to 4XTM Supv Enab. Yes, which means there is a 4XTMF installed. Each press of the 2 key will cause the display to toggle between 4XTM Supv Enab. No and 4XTM Supv Enab. Yes. Refer to the table on page 47 for permissible settings.

### Remote Sync Enable

Synchronization is a feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. Refer to Section 2.5, “Remote Synchronization Output”, on page 27 for more information. To enable remote synchronization, press the 3 key while viewing System Setup Screen #5. Each press of the key will toggle the screen between Rem Sync Enab Yes and Rem Sync Enab No.

### 3.6.6 History

The History option allows an authorized user to view or erase events which have occurred in the control panel. Pressing 1 while viewing Programming Screen #3 will display the History options as shown in the following display:

**History Screen**

1=VIEW EVENTS  
2=ERASE HISTORY

### View Events

Pressing 1 while viewing the History Screen will allow the user to select the events to be viewed as illustrated in the following:

**View Events Screen**

1=VIEW ALL  
2=VIEW ALARMS  
3=VIEW OTHER EVENTS

While displaying the View Events screen, press 1 to view all events, 2 to view only alarms or 3 to view other events. Use the up and down arrow keys to scroll through all of the displayed events.

### Erase History

The Erase History option allows a user to erase all events from the history file. This will provide a clean slate in order to use the history file to track future events. Pressing 2 while viewing the History Screen will display the following screen:

**Erase History Screen**

1=YES  
2=NO

Pressing 1 while viewing the Erase History Screen will erase all events from the History file. During this process, the display will read as follows:

**Erase History Wait Screen**

ERASING HISTORY  
PLEASE WAIT
After the History file has been erased, the display will return to the History Screen.

3.6.7 Communicator

The communicator settings allow the user to configure the settings for the pre-installed IPOTS-COM and CELL-MOD/CELL-CAB-FL if installed in the system. Pressing 2 while viewing the Programming Screen #3 will cause the following Communicator options to be displayed:

- Communicator Installed
  The pre-installed communicator provides communication to a central station. Use of the communicator requires it be enabled in user programming. Pressing 1 while viewing the Communicator Screen #1 will change the display to Installed No. Each press of the 1 key will cause the display to toggle between Installed Yes and Installed No.

- POTS Settings
  The POTS settings configure the system when telephone lines are used to contact central station. Pressing 2 while viewing the Communicator Screen #1 will display the following.

  - **POTS Line (X)**
    If telephone lines are connected to the IPOTS-COM board at J4 (Line 1) and J5 (Line 2), their settings can be configured by pressing 1 or 2, respectively. Pressing 1 or 2 will display the following screen. The programming options for Line 1 and Line 2 are identical.

    - **Phone Line (X) Enable**
      To enable the phone line, press 1 while viewing the POTS Line (X) Screen #1 to change the display to Enabled Yes. Each press of the 1 key will cause the display to toggle between Enabled Yes and Enabled No.

    - **Type**
      To select the type, press 2 while viewing the POTS Line (X) Screen #1. The following screen will be displayed:

      - **Supervised Phone Line**
        The Supervised Phone Line feature allows the user to disable the supervision of Phone Lines when using an alternate means of secondary transmission path. The factory default setting is Phone Line (X) supervised. Supervision must be set to Yes if the selected transmission path is POTS. Pressing 1 for Supervision while viewing the POTS Line (X) Screen #2 will change the screen to read Supervision No. Each press of the 1 key will toggle the option between Supervise Yes and No. Refer to the table on page 47 for permissible settings.
Programming

Master Programming Level

- **Gains**

The Gains value is the telephone’s transmitting “volume control”. To adjust the settings, press 3 while viewing the POTS Settings screen. The following screen will be displayed:

```
1=DIALING   NORM
2=REPORTING NORM
```

Gains Screen

The Gains value can be adjusted for when the telephones lines are in use for Dialing and Reporting. Press 1 or 2 to change these values, respectively. The following screen will display for both options.

```
1=LOW
2=NORMAL
3=HIGH
```

Gains Screen

Press 1 for Low, 2 for Normal, and 3 for High. After the Gains value has been selected, the display will return to the Gains Screen.

- **IP Settings**

The IP settings configure the system when the central station will be contacted over the internet. The following screens allow the user to enter the device addresses needed for communication. Pressing 3 while viewing the Communicator Screen #1 will display the following.

```
1=DHCP ENABLED NO
2=STATIC SETTINGS
3=ENTER PIN
```

IP Settings Screen #1

```
1=ETHERNET FAULT 01
2=CELLULAR FAULT 01
```

IP Settings Screen #2

- **DHCP Enabled**

If the internet router used by the IPOTS-COM is configured for DHCP (Dynamic Host Configuration Protocol) where addresses are automatically assigned, press 1 while viewing the IP Settings Screen to change the display to Enabled Yes. Each press of the 1 key will cause the display to toggle between Enabled Yes and Enabled No. If the DHCP is enabled, the Static Settings option will disappear since there is no need to enter addresses manually.

- **Static Settings**

The Static Settings are used to set the addresses manually if the DHCP is not enabled. Press 2 on the IP Settings Screen. The following screens will display:

```
DEVICE IP ADDRESS XXX.XXX.XXX.XXX
```

Device IP Address Screen

```
SUBNET MASK XXX.XXX.XXX.XXX
```

Subnet Mask Screen

```
GATEWAY IP ADDRESS XXX.XXX.XXX.XXX
```

Gateway IP Address Screen

```
PREFERRED DNS XXX.XXX.XXX.XXX
```

Preferred DNS Screen

The A flashing cursor will appear on the first X to the left. Enter the twelve digit address. When the address has been entered, press the Enter key to store the address number. The display will return to the IP Settings Screen.

- **PIN**

In the event that the Communicator needs to be replaced, the device will need to be re-registered with AlarmNet. AlarmNet will issue a PIN to be entered into the panel for verification. Pressing 3 on the IP Settings screen will display the following.

```
ENTER 4 DIGIT PIN NUMBER ****
```

PIN Number Screen

Enter the 4 digit PIN provided by AlarmNet and press Enter. The display will indicate that it is sending the PIN to AlarmNet for verification.
Master Programming Level

Programming

Ethernet Fault

The Ethernet Fault Time is the duration of the communication loss between the FACP and the ethernet infrastructure.

Pressing 1 on the IP Settings Screen #2 will display the following:

![Ethernet Fault Time Screen]

Select the number of minutes allowed, 1-60, before a fault is shown on the panel.

Cellular Fault

The Cellular Fault Time is the duration of the communication loss between the FACP and the cellular infrastructure (e.g. cell tower).

Pressing 2 on the IP Settings Screen #2 will display the following:

![Cellular Fault Time Screen]

Select the number of minutes allowed, 1-60, before a fault is shown on the panel.

Primary and Secondary Communication Paths

The Primary and Secondary Communication Path screens are used to configure the methods (primary and backup) for reporting to central station. Pressing 1 for Pri or 2 for Sec will display the following screens.

Note that the following information must be entered for both the Primary and Secondary Communication Paths.

![Communicator Screen #1]

![Comm Path Screen]

POTS

To configure the communication method to contact central station as a telephone line, select 1 for POTS.

The following screens will display.

![POTS Comm Path Screen #1]

Enable

To enable the phone line, press 1 while viewing the POTS Line (X) Screen #1 to change the display to Enabled Yes. Each press of the 1 key will cause the display to toggle between Enabled Yes and Enabled No.

NOTE: For UL applications: when POTS is used as the primary transmission path, the use of POTS as the secondary transmission path is only allowed with approval of the local AHJ.

For ULC applications: when POTS is used as the primary transmission path, alarm signals will be sent out on both the primary and secondary transmission paths.

Account Code

Pressing 3 while viewing POTS (XXX) Path Screen #1 will cause the following screen to be displayed:

![Account Codes Screen]
The Account Code, which is assigned by a Central Station, depends on the communication format being used. The Account Code screen will have a flashing cursor in the lower left corner. Enter the supplied account code using 0 - 9 and A - F keys.

**Phone Number**

Pressing 2 while viewing POTS XXX Path Screen #2 will cause the following screen to be displayed:

![Phone Numbers Screen](image)

The Phone Number screen is used to enter the Central Station phone number that the Communicator will be contacting. A maximum of 20 characters can be entered with valid entries being 0 - 9 and A - C where A = *, B = # and C = 2 seconds pause.

A flashing cursor will appear in the lower left corner of the screen. Enter the first digit then press the right arrow key to move the cursor to the right one position. Enter the second digit and repeat the process until all digits are entered. Press the Enter key to store the phone number in memory.

**Communication Format**

Pressing 1 while viewing Primary/Secondary Screen #3 will cause the following screen to be displayed:

![Comm Format Screen](image)

The Communication Format is determined by the type of receiver that the Communicator is transmitting to. Consult your Central Station for proper selection or consult our factory representatives. For any format chosen, the control panel automatically programs all of the event codes.

Select the Communication Format by pressing the corresponding number key while viewing the Comm Format screen. The following table describes each format:

<table>
<thead>
<tr>
<th>Screen Selection</th>
<th>Communication Format Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADEMCO CONTACT ID</td>
<td>Contact ID, DTMF, 1400/2300 ACK</td>
</tr>
<tr>
<td>SIA 8</td>
<td>Security Industry Association, 8 messages per call</td>
</tr>
<tr>
<td>SIA 20</td>
<td>Security Industry Association, 20 messages per call</td>
</tr>
</tbody>
</table>

**Test Time Interval**

Pressing 1 while viewing POTS (XXX) Comm Path #4 will cause the following screens to be displayed:

![Test Time Interval Screen #1](image)

![Test Time Interval Screen #2](image)

The test report sent to the Central Station phone number may be sent once every 6, 8, 12, or 24 hours. Select the desired Test Time Interval by pressing the corresponding digit in the screens shown above. Refer to the table on page 47 for permissible settings.

**24 Hour Test Time**

Pressing 2 while viewing POTS (XXX) Comm Path #4 will cause the following screen to be displayed:

![24 Hour Test Time Screen](image)

Use the 24 Hour Test Time screen to program the time that the Communicator will transmit the 24 Hour Test to the Central Station. A flashing cursor will appear in the lower left corner of the screen. Enter a four digit number representing the test time using military time (0000 = midnight and 2359 = 11:59PM).
**Ethernet**

To configure the communication method to contact central station as an ethernet connection, select 2 for Ethernet from the Comm Path Screen. The following screens will display.

![Comm Path Screen #1](image)

**Enable**

To enable the Ethernet connection, press 1 while viewing the Ethernet Options Screen #1 to change the display to Enabled Yes. Each press of the 1 key will cause the display to toggle between Enabled Yes and Enabled No.

![Ethernet Options Screen #1](image)

**Central Station Account**

Press 2 on Ethernet Options Screen #1 to display the following:

![Ethernet Options Screen #2](image)

Enter the City ID, Central Station ID, and Account Code all provided by the monitoring station.

**Supervision Settings**

Pressing 1 while viewing Ethernet Options Screen #2 will cause the display to toggle between the 4 supervision setting options. Toggle to select NFPA 2010 Sole Path, NFPA 2010 Dual Path, NFPA 2013 Sole Path, or NFPA 2013 Dual Path. Refer to the table on page 47 for permissible settings.

The Supervision Interval is the time from the check-in at AlarmNet to the FACP. Select Dual Path when Ethernet and Cellular communications will be used. Select Sole Path when only Ethernet or Cellular is used.

- NFPA 2010 Dual Path: Supervision Interval: 24 Hours
- NFPA 2010 Sole Path: Supervision Interval: 5 min
- NFPA 2013 Dual Path: Supervision Interval: 6 Hours
- NFPA 2013 Sole Path: Supervision Interval: 1 Hour

**Cellular**

To configure the communication method to contact central station as a GSM/Cellular connection, select 3 for Cellular from the Comm Path Screen. The following screens will display. Note that a CELL-MOD or CELL-CAB-FL must be installed in the system to use this feature.

![Comm Path Screen #1](image)

**Enable**

To enable the Ethernet connection, press 1 while viewing the Cellular Options Screen #1 to change the display to Enabled Yes. Each press of the 1 key will cause the display to toggle between Enabled Yes and Enabled No.

![Cellular Options Screen #1](image)

**Central Station Account**

Press 2 on Cellular Options Screen #1 to display the following:

![Cellular Options Screen #2](image)

Enter the City ID, Central Station ID, and Account Code all provided by the monitoring station.
Programming

Master Programming Level

**Supervision Settings**

Pressing 1 while viewing Ethernet Options Screen #2 will cause the display to toggle between the 4 supervision setting options. Toggle to select NFPA 2010 Sole Path, NFPA 2010 Dual Path, NFPA 2013 Sole Path, or NFPA 2013 Dual Path. Refer to the table on page 47 for permissible settings.

The Supervision Interval is the time from the check-in at AlarmNet to the FACP. Select Dual Path when Ethernet and Cellular communications will be used. Select Sole Path when only Ethernet or Cellular is used.

- NFPA 2010 Dual Path: Supervision Interval: 24 Hours
- NFPA 2010 Sole Path: Supervision Interval: 5 min
- NFPA 2013 Dual Path: Supervision Interval: 6 Hours
- NFPA 2013 Sole Path: Supervision Interval: 1 Hour

**NOTE:** These supervision settings apply to both the Cellular settings and the Ethernet settings.

**Trouble Report Limit (Dialer Runaway Prevention)**

The Report Limit option limits the number of Communicator trouble calls to the Central Station, to a programmed amount between 0 and 99, for each unique trouble within a 24 hour period. Separate limit counters keep track of each unique type of trouble. Note that the number of phone line (communication) faults called to the Central Station are not limited by this feature. No subsequent restoral message is sent to the Central Station(s) for a particular trouble whose call limit has been reached. Local communicator announcement will still track the particular trouble and restoral.

To set the Trouble Report Limit, press 3 while viewing Communicator Screen #1. The following screen will be displayed.

**Trouble Call Limit**

RANGE 00-99

Enter a value between 00 and 99, then press Enter to set the Report Limit to this value. Refer to the table on page 47 for permissible settings.

**NOTE:** Entering a value of 00 will disable the Trouble Report Limit allowing the Communicator to call the Central Station an unlimited number of times.

**Report Style**

Pressing 1 while viewing Communicator Screen #3 will cause the Report Style display to toggle between Point and Zone. Setting the Report Style to Point will program the Communicator to report individual point status to the Central Station. The control panel is capable of monitoring a total of 50 addressable devices. Setting the Report Style to Zone will program the Communicator to report zone status to the Central Station. The control panel is capable of monitoring a total of 20 individual zones.

**NOTE:**
1. Detector/Module Address 001 will be reported to the Central Station as Point 001.
2. Detector/Module Address 002 will be reported to the Central Station as Point 002 with reports continuing in a similar fashion up to Detector/Module Address 50 which will be reported as Point 50.

**Event Codes**

Pressing 2 while viewing the Communicator Screen #3 will cause the following screen to be displayed:

Select the desired communication format to update Event Code programming.
Pressing the down arrow key allows viewing of all Events associated with the selected Communication Format. Pressing the number corresponding to the event displayed in each screen will display its default event code which can be customized by the programmer. For example, pressing 1 for Pull Station will display the following screen which allows the Event Code to be changed from the default value.

![Event Code Screen]

The tables on the following pages list all of the Events and their default Event Codes for the various Communication Formats. The information shown in Table 3.3 is automatically programmed for the Central Station phone number Event Codes when the Ademco Contact ID or SIA Format is selected. Enter 0s for an Event Code Setting to disable the report. Disabled reports will not get called to the Central Station. The programmer may enable the Event Types in programming as described on the previous page.

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Ademco Contact ID</th>
<th>SIA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active</td>
<td>Zone</td>
</tr>
<tr>
<td>PULL STATION</td>
<td>115</td>
<td>Zone</td>
</tr>
<tr>
<td>MON-USER-DEF-1</td>
<td>115</td>
<td>Zone</td>
</tr>
<tr>
<td>WATERFLOW</td>
<td>113</td>
<td>Zone</td>
</tr>
<tr>
<td>MON-USER-DEF-2</td>
<td>113</td>
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<td>MON-USER-DEF-9</td>
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**Table 3.3 Event Codes**
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<td>00</td>
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<td>AT</td>
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<td>YT</td>
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<td>YT</td>
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<td>COMM FAULT 2</td>
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<td>002</td>
<td>002</td>
<td>YC</td>
</tr>
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<td>TOTAL COMM FAULT</td>
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<td>N/A</td>
<td>00</td>
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<td>CELLULAR FAULT</td>
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<td>000</td>
<td>YS</td>
</tr>
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<td>000</td>
<td>000</td>
<td>VT</td>
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<td>001</td>
<td>YA</td>
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<td>002</td>
<td>YA</td>
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<td>000</td>
<td>000</td>
<td>YP</td>
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<td>000</td>
<td>EM</td>
</tr>
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<td>LCD-80F FAULT</td>
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<td>000</td>
<td>EM</td>
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<td>002</td>
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</table>

Table 3.3 Event Codes (Continued)
3.6.8 Annunciators

Pressing 3 while viewing Programming Screen #3 will cause the control panel to display the following screens:

A printer module, graphic annunciator module, LCD annunciator module, LED annunciator module, and relay module can be programmed into the ES-50X system. These devices communicate with the FACP over the ANN-BUS terminals on the control panel.

**ANN-BUS Setup**

Two ANN-BUS circuits are available on the ES-50X. Press 1 to configure the Primary ANN-BUS or press 2 to configure the Secondary ANN-BUS. The following screens will be displayed for either ANN-BUS circuit where (XXX) indicates either Primary or Secondary.

- **ANN-BUS Enabled**

The ANN-BUS must be enabled if any modules are connected to the ANN-BUS terminals. To enable the ANN-BUS, press 1 while viewing ANN-BUS screen #1 so that the display reads ANN (XXX) Enabled Yes. Each press of the 1 key will cause the display to toggle between ANN (XXX) Enabled Yes and ANN (XXX) Enabled No.

- **Modules Installed**

If an ANN-BUS module is installed, press 2 for Modules Installed to select ANN-BUS addresses for the module(s). The only difference between the two programming screens are the addresses. The Primary Bus module addresses will have a prefix of “1-” while the Secondary Bus module addresses will have a prefix of “2-”. The following screen will be displayed for either bus circuit.
Pressing the down arrow key will allow the programmer to view additional screens displaying Addresses 1-8. To select one or more addresses for the installed module(s), press the number key corresponding to the module address in each screen. The following screen will be displayed for each address:

![Screen 1](image1.png)

Pressing 1 for Type will display the following screens:

![Screen 2](image2.png)

Press the number corresponding to the module/device type that is installed with the selected address.

**NOTE:** If the module type selected is the ANN-80, ANN-100, or ANN-S/PG, or if Not Installed is selected, the ANN-BUS Address Screen shown on the previous page will be displayed following the module selection. The options selected for each of these modules will be the same for all modules of the same type (refer to “ANN-S/PG (Print) Options” on page 95 and “ANN-80/100 Options” on page 95).

If ANN-I/O, ANN-LED, or ANN-RLY is the selected module type, the following ANN-BUS Address Screen will be displayed:

![Screen 3](image3.png)

Since the options for each of these module types can be individually set, pressing 2 for Module Options, while viewing the ANN-BUS Address Screen will display the available options as described below.

### ANN-I/O Options

Pressing 2 for Module Options while viewing ANN-BUS Address screen when the ANN-I/O option is selected will display the following screen:

![Screen 4](image4.png)

Pressing 1 while viewing the ANN-I/O Address Screen #2 will program the annunciator module to annunciate either Point (addressable device address) information or Zone information. Each press of the 1 key will toggle the display between Zone and Point.

Pressing 1 while viewing the ANN-I/O Address Screen #3 will select the Point range to be annunciated (refer to the tables in “ANN-I/O Zone Option” on page 89 and “ANN-I/O Point Option” on page 90). If Point has been selected, each press of the 2 key for Range will change the points to be annunciated with the options being 001 - 030 and 031 - 050.

Pressing 2 while viewing ANN-I/O Address Screen #3 will select either addressable detectors or addressable modules to be annunciated.
ANN-I/O Zone Option

If Zone is selected as the module option, the first ten LEDs on the first ANN-I/O module will display the system status information. The remaining 30 LEDs on the first module and 20 LEDs on the second module will display the active/alarm status of each zone in the Zone Range programmed for that particular module. The LED assignments for the ANN-I/O module will be as follows.

<table>
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<th>Zone Range 000-029</th>
<th>Zone Range 030-049</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>AC Fault</td>
<td>Zone 030</td>
</tr>
<tr>
<td>2</td>
<td>Fire Alarm</td>
<td>Zone 031</td>
</tr>
<tr>
<td>3</td>
<td>Supervisory</td>
<td>Zone 032</td>
</tr>
<tr>
<td>4</td>
<td>Trouble</td>
<td>Zone 033</td>
</tr>
<tr>
<td>5</td>
<td>Alarm Silenced</td>
<td>Zone 034</td>
</tr>
<tr>
<td>6</td>
<td>Earth Fault</td>
<td>Zone 035</td>
</tr>
<tr>
<td>7</td>
<td>Battery Fault</td>
<td>Zone 036</td>
</tr>
<tr>
<td>8</td>
<td>Charger Fault</td>
<td>Zone 037</td>
</tr>
<tr>
<td>9</td>
<td>NAC Fault</td>
<td>Zone 038</td>
</tr>
<tr>
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<td>Zone 042</td>
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<tr>
<td>14</td>
<td>Zone 003</td>
<td>Zone 043</td>
</tr>
<tr>
<td>15</td>
<td>Zone 004</td>
<td>Zone 044</td>
</tr>
<tr>
<td>16</td>
<td>Zone 005</td>
<td>Zone 045</td>
</tr>
<tr>
<td>17</td>
<td>Zone 006</td>
<td>Zone 046</td>
</tr>
<tr>
<td>18</td>
<td>Zone 007</td>
<td>Zone 047</td>
</tr>
<tr>
<td>19</td>
<td>Zone 008</td>
<td>Zone 048</td>
</tr>
<tr>
<td>20</td>
<td>Zone 009</td>
<td>Zone 049</td>
</tr>
<tr>
<td>21</td>
<td>Zone 010</td>
<td>Not Used</td>
</tr>
<tr>
<td>22</td>
<td>Zone 011</td>
<td>Not Used</td>
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<tr>
<td>23</td>
<td>Zone 012</td>
<td>Not Used</td>
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<tr>
<td>24</td>
<td>Zone 013</td>
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<td>40</td>
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</tr>
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</table>
ANN-I/O Point Option
If Point is selected as the module option, the first ten LED driver outputs on the first ANN-I/O module will display the system status information. The remaining 30 LED driver outputs on the first module and 20 LEDs on the second module will display the active/alarm status of each point in the Point Range programmed for that particular module. The points that will be annunciated on a particular ANN-I/O module depend on the programming options selected as far as the device type (detector or module) to be annunciated. The LED assignments for each ANN-I/O module will be as follows.

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<thead>
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<th>ANN-I/O Module #1 Function</th>
<th>ANN-I/O Module #2 Function</th>
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<td>AC Fault</td>
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</tr>
<tr>
<td>2</td>
<td>Fire Alarm</td>
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</tr>
<tr>
<td>3</td>
<td>Supervisory</td>
<td>Not Used</td>
</tr>
<tr>
<td>4</td>
<td>Trouble</td>
<td>Not Used</td>
</tr>
<tr>
<td>5</td>
<td>Alarm Silenced</td>
<td>Not Used</td>
</tr>
<tr>
<td>6</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
<tr>
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<td>Not Used</td>
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<tr>
<td>18</td>
<td>Point 008 - Active/Alarm</td>
<td>Point 038 - Active/Alarm</td>
</tr>
<tr>
<td>19</td>
<td>Point 009 - Active/Alarm</td>
<td>Point 039 - Active/Alarm</td>
</tr>
<tr>
<td>20</td>
<td>Point 010 - Active/Alarm</td>
<td>Point 040 - Active/Alarm</td>
</tr>
<tr>
<td>21</td>
<td>Point 011 - Active/Alarm</td>
<td>Point 041 - Active/Alarm</td>
</tr>
<tr>
<td>22</td>
<td>Point 012 - Active/Alarm</td>
<td>Point 042 - Active/Alarm</td>
</tr>
<tr>
<td>23</td>
<td>Point 013 - Active/Alarm</td>
<td>Point 043 - Active/Alarm</td>
</tr>
<tr>
<td>24</td>
<td>Point 014 - Active/Alarm</td>
<td>Point 044 - Active/Alarm</td>
</tr>
<tr>
<td>25</td>
<td>Point 015 - Active/Alarm</td>
<td>Point 045 - Active/Alarm</td>
</tr>
<tr>
<td>26</td>
<td>Point 016 - Active/Alarm</td>
<td>Point 046 - Active/Alarm</td>
</tr>
<tr>
<td>27</td>
<td>Point 017 - Active/Alarm</td>
<td>Point 047 - Active/Alarm</td>
</tr>
<tr>
<td>28</td>
<td>Point 018 - Active/Alarm</td>
<td>Point 048 - Active/Alarm</td>
</tr>
<tr>
<td>29</td>
<td>Point 019 - Active/Alarm</td>
<td>Point 049 - Active/Alarm</td>
</tr>
<tr>
<td>30</td>
<td>Point 020 - Active/Alarm</td>
<td>Point 050 - Active/Alarm</td>
</tr>
<tr>
<td>31</td>
<td>Point 021 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>32</td>
<td>Point 022 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>33</td>
<td>Point 023 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>34</td>
<td>Point 024 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>35</td>
<td>Point 025 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>36</td>
<td>Point 026 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>37</td>
<td>Point 027 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>38</td>
<td>Point 028 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>39</td>
<td>Point 029 - Active/Alarm</td>
<td>Not Used</td>
</tr>
<tr>
<td>40</td>
<td>Point 030 - Active/Alarm</td>
<td>Not Used</td>
</tr>
</tbody>
</table>
ANN-LED Options

Pressing 2 for Module Options while viewing the ANN XXX Address Screen when the ANN-LED option is selected, will display the following screens:

![ANN-LED Address Screen #1](image1.png)

![ANN-LED Address Screen #2](image2.png)

![ANN-LED Address Screen #3](image3.png)

The first screen indicates that the ANN-LED at the selected ANN-BUS address is programmed to annunciate Alarms, Troubles and Supervisors for Zones 000 through 009. The programming can be changed using ANN-LED Address Screen 2.

Pressing 1 while viewing ANN-LED Address Screen #2 will program the annunciator module to annunciate either Point (addressable device address) information or Zone information. Each press of the 1 key will toggle the display between Point and Zone.

Pressing 2 while viewing ANN-LED Address Screen #2 will program the annunciator module to annunciate only Alarms or Alarms, Troubles and Supervisors (ATS). Each press of the 2 key will toggle the display between Alarms and ATS.

Pressing 1 while viewing ANN-LED Address Screen #3 will select the Point or Zone range to be annunciated (refer to the tables in “ANN-RLED Zone Option - Alarm Only” on page 91 and “ANN-RLED Point Option - Alarm Only” on page 92). Pressing the 1 key will display an additional screen where the range can be selected.

- If Zone has been selected, and Alarms Only are to be annunciated, the new screen will give the options of annunciating Zone 000 - 009 or 030 - 049. Two ANN-LED modules are required to annunciate all zones in this configuration.
- If Zone has been selected, and Alarms, Troubles and Supervisors are to be annunciated, the new screen will give the options of annunciating Zone 000 - 009, 010 - 019, 020 - 029, 030 - 039, or 040 - 049. Five ANN-LED modules are required to annunciate all zones in this configuration.
- If Points has been selected, and Alarms Only are to be annunciated, the new screen will give the options of annunciating Points 001 - 030 and 031 - 050. Five ANN-LED modules are required to annunciate all points in this configuration.
- If Points has been selected, and Alarms, Troubles and Supervisors are to be annunciated, the new screen will give the options of annunciating Points 001 - 010, 011 - 020, 021 - 030, 031 - 040 or 041 - 050. Five ANN-LED modules are required to annunciate all points in this configuration.

ANN-RLED Zone Option - Alarm Only

If Zone is selected as the module option, and the module is programmed to annunciate alarms only, the first ten LEDs on the ANN-RLED module will display the status information. The remaining 30 LEDs on the first module and the last 30 LEDs on the second module will display the active/alarms status of each zone in the Zone Range programmed for that particular module. The LED assignments for each ANN-LED module will be as follows.

<table>
<thead>
<tr>
<th>Alarm Silenced</th>
<th>NAC 1 Fault</th>
<th>NAC 2 Fault</th>
<th>Not Used</th>
<th>Not Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth Fault</td>
<td>Battery Fault</td>
<td>Charger Fault</td>
<td>Disabled</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Zone 000</td>
<td>Zone 001</td>
<td>Zone 002</td>
<td>Zone 003</td>
<td>Zone 004</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 005</td>
<td>Zone 006</td>
<td>Zone 007</td>
<td>Zone 008</td>
<td>Zone 009</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 010</td>
<td>Zone 011</td>
<td>Zone 012</td>
<td>Zone 013</td>
<td>Zone 014</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 015</td>
<td>Zone 016</td>
<td>Zone 017</td>
<td>Zone 018</td>
<td>Zone 019</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 020</td>
<td>Zone 021</td>
<td>Zone 022</td>
<td>Zone 023</td>
<td>Zone 024</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 025</td>
<td>Zone 026</td>
<td>Zone 027</td>
<td>Zone 028</td>
<td>Zone 029</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

Table 3.4  ANN-RLED Module #1

<table>
<thead>
<tr>
<th>Not Used</th>
<th>Not Used</th>
<th>Not Used</th>
<th>Not Used</th>
<th>Not Used</th>
</tr>
</thead>
<tbody>
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<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
<tr>
<td>Zone 030</td>
<td>Zone 031</td>
<td>Zone 032</td>
<td>Zone 033</td>
<td>Zone 034</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 035</td>
<td>Zone 036</td>
<td>Zone 037</td>
<td>Zone 038</td>
<td>Zone 039</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 040</td>
<td>Zone 041</td>
<td>Zone 042</td>
<td>Zone 043</td>
<td>Zone 044</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Zone 045</td>
<td>Zone 046</td>
<td>Zone 047</td>
<td>Zone 048</td>
<td>Zone 049</td>
</tr>
<tr>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
<tr>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
</tbody>
</table>

Table 3.5  ANN-RLED Module #2
ANN-LED Zone Option - Alarm, Trouble and Supervisory

If Zone is selected as the module option, and the module is programmed to annunciate alarms, troubles and supervisories, the first ten LEDs on the first ANN-LED module will display the system status information. The remaining 30 LEDs on the first module and the last 30 LEDs on the remaining modules will display the alarm, trouble and supervisory status for each of the ten zones in the Zone Range programmed for that particular module. The LED assignments for each ANN-LED module will be as follows.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Alarm Status</th>
<th>Zone</th>
<th>Alarm Status</th>
<th>Zone</th>
<th>Alarm Status</th>
<th>Zone</th>
<th>Alarm Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>Active/Alarm</td>
<td>001</td>
<td>Active/Alarm</td>
<td>002</td>
<td>Active/Alarm</td>
<td>003</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>000</td>
<td>Trouble</td>
<td>001</td>
<td>Trouble</td>
<td>002</td>
<td>Trouble</td>
<td>003</td>
<td>Trouble</td>
</tr>
<tr>
<td>000</td>
<td>Supervisory</td>
<td>001</td>
<td>Supervisory</td>
<td>002</td>
<td>Supervisory</td>
<td>003</td>
<td>Supervisory</td>
</tr>
<tr>
<td>005</td>
<td>Active/Alarm</td>
<td>006</td>
<td>Active/Alarm</td>
<td>007</td>
<td>Active/Alarm</td>
<td>008</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>005</td>
<td>Trouble</td>
<td>006</td>
<td>Trouble</td>
<td>007</td>
<td>Trouble</td>
<td>008</td>
<td>Trouble</td>
</tr>
<tr>
<td>005</td>
<td>Supervisory</td>
<td>006</td>
<td>Supervisory</td>
<td>007</td>
<td>Supervisory</td>
<td>008</td>
<td>Supervisory</td>
</tr>
</tbody>
</table>

Table 3.6 ANN-LED Module #1

<table>
<thead>
<tr>
<th>Zone</th>
<th>Alarm Status</th>
<th>Zone</th>
<th>Alarm Status</th>
<th>Zone</th>
<th>Alarm Status</th>
<th>Zone</th>
<th>Alarm Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>010</td>
<td>Active/Alarm</td>
<td>011</td>
<td>Active/Alarm</td>
<td>012</td>
<td>Active/Alarm</td>
<td>013</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>010</td>
<td>Trouble</td>
<td>011</td>
<td>Trouble</td>
<td>012</td>
<td>Trouble</td>
<td>013</td>
<td>Trouble</td>
</tr>
<tr>
<td>010</td>
<td>Supervisory</td>
<td>011</td>
<td>Supervisory</td>
<td>012</td>
<td>Supervisory</td>
<td>013</td>
<td>Supervisory</td>
</tr>
<tr>
<td>015</td>
<td>Active/Alarm</td>
<td>016</td>
<td>Active/Alarm</td>
<td>017</td>
<td>Active/Alarm</td>
<td>018</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>015</td>
<td>Trouble</td>
<td>016</td>
<td>Trouble</td>
<td>017</td>
<td>Trouble</td>
<td>018</td>
<td>Trouble</td>
</tr>
<tr>
<td>015</td>
<td>Supervisory</td>
<td>016</td>
<td>Supervisory</td>
<td>017</td>
<td>Supervisory</td>
<td>018</td>
<td>Supervisory</td>
</tr>
</tbody>
</table>

Table 3.7 ANN-LED Module #2

The LED assignments for the modules annunciating Zone Ranges 020 - 029, 030 - 039, and 040 - 049 will follow the same pattern as the second ANN-LED module.

ANN-RLED Point Option - Alarm Only

If Point is selected as the module option and the module is programmed to annunciate alarms only, the first ten LEDs on the first ANN-RLED module will display the system status information. The remaining 30 LEDs on the first module and LEDs 11 - 30 on the second module will display the active/alarm status of each point in the Point Range programmed for that particular module. The LED assignments for each ANN-RLED module will be as follows.

<table>
<thead>
<tr>
<th>Point</th>
<th>Alarm Status</th>
<th>Point</th>
<th>Alarm Status</th>
<th>Point</th>
<th>Alarm Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Active/Alarm</td>
<td>002</td>
<td>Active/Alarm</td>
<td>003</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>006</td>
<td>Active/Alarm</td>
<td>007</td>
<td>Active/Alarm</td>
<td>008</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>011</td>
<td>Active/Alarm</td>
<td>012</td>
<td>Active/Alarm</td>
<td>013</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>016</td>
<td>Active/Alarm</td>
<td>017</td>
<td>Active/Alarm</td>
<td>018</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>021</td>
<td>Active/Alarm</td>
<td>022</td>
<td>Active/Alarm</td>
<td>023</td>
<td>Active/Alarm</td>
</tr>
<tr>
<td>026</td>
<td>Active/Alarm</td>
<td>027</td>
<td>Active/Alarm</td>
<td>028</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

Table 3.8 First ANN-RLED Module (Point Range 001 - 030)
ANN-LED Point Option - Alarm, Trouble and Supervisory

If **Point** is selected as the module option, and the module is programmed to annunciate **alarms, troubles and supervisories**, the first ten LEDs on the first ANN-LED module will display the system status information. The remaining 30 LEDs on the first module and the last 30 LEDs on the remaining modules will display the alarm, trouble and supervisory status for each of the ten points in the Point Range programmed for that particular module. The LED assignments for each ANN-LED module will be as follows.

### Second ANN-RLED Module (Point Range 031 - 050)

<table>
<thead>
<tr>
<th></th>
<th>Point 031</th>
<th>Point 032</th>
<th>Point 033</th>
<th>Point 034</th>
<th>Point 035</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 036</th>
<th>Point 037</th>
<th>Point 038</th>
<th>Point 039</th>
<th>Point 040</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 041</th>
<th>Point 042</th>
<th>Point 043</th>
<th>Point 044</th>
<th>Point 045</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 046</th>
<th>Point 047</th>
<th>Point 048</th>
<th>Point 049</th>
<th>Point 050</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
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</table>

### First ANN-LED Module (Point Range 001 - 010)

<table>
<thead>
<tr>
<th></th>
<th>Alarm Silenced</th>
<th>NAC 1 Fault</th>
<th>NAC 2 Fault</th>
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<th>Not Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Earth Fault</th>
<th>Battery Fault</th>
<th>Charger Fault</th>
<th>Disabled</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 001</th>
<th>Point 002</th>
<th>Point 003</th>
<th>Point 004</th>
<th>Point 005</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 001</th>
<th>Point 002</th>
<th>Point 003</th>
<th>Point 004</th>
<th>Point 005</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Trouble</td>
<td>Active/Alarm</td>
<td>Trouble</td>
<td>Active/Alarm</td>
<td>Trouble</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 001</th>
<th>Point 002</th>
<th>Point 003</th>
<th>Point 004</th>
<th>Point 005</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Supervisory</td>
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<td>Supervisory</td>
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</tbody>
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<table>
<thead>
<tr>
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<th>Point 008</th>
<th>Point 009</th>
<th>Point 010</th>
</tr>
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<td>LED</td>
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<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 006</th>
<th>Point 007</th>
<th>Point 008</th>
<th>Point 009</th>
<th>Point 010</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
</tr>
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</table>

### Second ANN-LED Module (Point Range 011 - 020)

<table>
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<th>Not Used</th>
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<tbody>
<tr>
<td>LED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Not Used</th>
<th>Not Used</th>
<th>Not Used</th>
<th>Not Used</th>
<th>Not Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 011</th>
<th>Point 012</th>
<th>Point 013</th>
<th>Point 014</th>
<th>Point 015</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 011</th>
<th>Point 012</th>
<th>Point 013</th>
<th>Point 014</th>
<th>Point 015</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Trouble</td>
<td>Active/Alarm</td>
<td>Trouble</td>
<td>Active/Alarm</td>
<td>Trouble</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 011</th>
<th>Point 012</th>
<th>Point 013</th>
<th>Point 014</th>
<th>Point 015</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 016</th>
<th>Point 017</th>
<th>Point 018</th>
<th>Point 019</th>
<th>Point 020</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
<td>Active/Alarm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 016</th>
<th>Point 017</th>
<th>Point 018</th>
<th>Point 019</th>
<th>Point 020</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Trouble</td>
<td>Active/Alarm</td>
<td>Trouble</td>
<td>Active/Alarm</td>
<td>Trouble</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Point 016</th>
<th>Point 017</th>
<th>Point 018</th>
<th>Point 019</th>
<th>Point 020</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
<td>Supervisory</td>
</tr>
</tbody>
</table>

The LED assignments for the modules annunciating Point Ranges 021 - 030, 031 - 040 and 041 - 050, will follow the same pattern as the second ANN-LED Module: third module Point Range 021 - 030, fourth module Point Range 031 - 040 and fifth module Point Range 041 - 050.
Pressing 2 for Module Options while viewing the ANN-BUS Address Screen when the ANN-RLY option is selected, will cause the following screen to be displayed:

The ANN-RLY module provides ten Form-C relays which can be programmed for various functions. The initial screen displays Relays 1 through 3. Pressing the down arrow key will display the remaining relays for this module.

To program any of the ANN-RLY relays, while viewing the appropriate ANN-RLY Option screen, press the number key corresponding to the relay to be programmed. Following is a list of the available programming options for each relay:

- Alarm
- Supervisory
- Supervisory AR
- Trouble
- Comm Fail
- Process Mon
- Process Mon AR
- AC Loss
- Hazard
- Medical
- Silenceable Alarm
- Zone Active XXX (where XXX = programmed zone 000 to 019)
- Carbon Monoxide

### Auto-Configure

The ANN-BUS Auto-Configure features allows the programmer to quickly bring all installed ANN-BUS modules online on the selected ANN-BUS. The software will search the selected circuit for all ANN-BUS modules and automatically program the device type and address into the system. For the Auto-Configure to work, the selected ANN-BUS must be enabled, the annunciators must be connected/powered, and a unique address must be set on each annunciator. Pressing 3 while viewing ANN-BUS (XXX) Screen #1 will begin the Auto-Configure process and cause the following screen to be displayed:

### Class A

This option applies to the Primary ANN-BUS only. The primary ANN-BUS can be configured for Class A wiring. If wired in Class A configuration, press 1 on ANN-BUS Primary Screen #2 to select Class A Yes. Each press of the 1 key toggles between Class A No and Class A Yes.

### ANN-BUS Options

Three ANN-BUS modules have more programming options. Pressing 3 while viewing the Annunciators screen will display the following.
## ANN-S/PG (Print) Options

The Print option allows the programmer to configure the optional printer. Pressing 1 while viewing the ANN-BUS Options screen will display the following screens:

- **ANN-S/PG Options Screen #1**
  - 1=PORT
  - 2=PRINTER SUPV N/A
  - 3=OFFLINE TIMER N/A

- **ANN-S/PG Options Screen #2**
  - 1=BAUD RATE 9600
  - 2=DATA BITS 7
  - 3=PARITY EVEN

- **ANN-S/PG Options Screen #3**
  - 1=STOP BITS 1.0

Pressing 1 for Port while viewing ANN-S/PG Options screen #1 will allow the programmer to select between a Parallel and Serial Port for printer connection. Each press of the 1 key will cause the display to toggle between Port PAR (parallel) and Port SER (serial). It is important to note that the interface selected determines which options are available to the user.

If the Parallel Port option is selected, the user has the ability to select an offline timer for the supervision by pressing 2 for Printer Supervision while viewing Print Options screen #1. Each press of the 2 key will cause the display to toggle between Printer Supv NO for no supervision and Printer Supv YES for printer supervision. Note that this option is not selectable if the Serial Port option has been selected.

If the Parallel Port option is selected, the user has the ability to select an Offline Timer by pressing 3 while viewing Print Options screen #1. The resultant screen allows the programmer to program the Offline Timer for a delay of between 0 and 255 seconds before loss of printer supervision is reported as a trouble.

If the Serial Port option is selected, the Printer Supv and Offline Timer options will not be available. The Baud Rate, Data Bits, Parity and Stop Bits options are only available when the Serial Port option has been selected.

Pressing 1 for Baud Rate while viewing ANN-S/PG Options screen #2 will cause a screen to appear which allows the user to select a Baud Rate of 19200, 9600, or 2400.

Pressing 2 for Data Bits while viewing ANN-S/PG Options screen #2 will cause a screen to appear which allows the user to select 7 or 8 Data Bits.

Pressing 3 for Parity while viewing ANN-S/PG Options screen #2 will cause a screen to appear which allows the user to select between No Parity, Even Parity, or Odd Parity.

Pressing 1 for Stop Bits while viewing ANN-S/PG Options screen #3 will cause a screen to appear which allows the user to select between 1.0 or 2.0 Stop Bits.

### ANN-LED Options

This option allows the programmer to configure the optional ANN-LED annunciator. Pressing 2 while viewing the ANN-BUS screen will display the following screens.

- **ANN-LED Options Screen #1**
  - 1=PEIZO ENABLE NO
  - 2=LMP TST ENABLE NO
  - 3=SIL BTN ENABLE NO

The Piezo Enable option allows the programmer to select whether the piezo sounder on any installed ANN-LED module will ever sound. Pressing 1 while viewing the ANN-LED Options Screen causes the display to toggle between Piezo Enable Yes and Piezo Enable No.

The Lamp Test Enable (LMP TST ENABLE) option allows the programmer to select whether the Lamp Test button on any installed ANN-LED annunciator function normally or always be ignored. Pressing 2 while viewing the ANN-LED Options Screen causes the display to toggle between Lmp Tst Enable Yes (Lamp Test button functions normally) and Lmp Tst Enable No (Lamp Test button never functions).

The Silence Button Enable (SIL BTN ENABLE) option allows the programmer to select whether the Silence button on any installed ANN-LED annunciator function normally or always be ignored. Pressing 3 while viewing the ANN-LED Options Screen causes the display to toggle between Sil Btn Enable Yes (Silence button functions normally) and Sil Btn Enable No (Silence button never functions).

### ANN-80/100 Options

Pressing 3 while viewing the ANN-BUS screen will display the following screen:

- **ANN-80/100 Options Screen #1**
  - 1=PIEZO ENABLE YES
  - 2=LOCK ENABLE YES
  - 3=RCK BTN ENABLE YES

The Piezo Enable option allows the programmer to select whether the piezo sounder on any installed ANN-80 or ANN-100 module will ever sound. Pressing 1 while viewing the ANN-80/100 Options Screen #1 causes the display to toggle between Piezo Enable Yes and Piezo Enable No.
The **Lock Enable** option allows the programmer to select whether or not any installed ANN-80 or ANN-100 annunciator must be unlocked by its key before any annunciator key presses will function. Pressing 2 while viewing the ANN-80/100 Options Screen #1 causes the display to toggle between **Lock Enable Yes** (annunciator must be unlocked for keys to function) and **Lock Enable No** (lock position is ignored). This option is not available in Canadian applications. Refer to the table on page 47 for permissible settings.

The **Acknowledge Button Enable** (**ACK BTN ENABLE**) option allows the programmer to select whether the Ack/Step button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 3 while viewing the ANN-80/100 Options Screen #1 causes the display to toggle between **Ack Btn Enable Yes** (Ack/Step button functions normally) and **Ack Btn Enable No** (Ack/Step button never functions). In Canadian mode, the FACP cannot be controlled by the ANN-100 so the Reset feature is unavailable. This option is called **STEP ENABLE** in Canadian applications. Enabling the Step feature will allow the user to scroll through events on the screen.

The **Silence Button Enable** (**SIL BTN ENABLE**) option allows the programmer to select whether the Silence button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 1 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between **Sil Btn Enable Yes** (Silence button functions normally) and **Sil Btn Enable No** (Silence button never functions).

The **Reset Button Enable** (**RST BTN ENABLE**) option allows the programmer to select whether the Reset button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 2 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between **Rst Btn Enable Yes** (Reset button functions normally) and **Rst Btn Enable No** (Reset button never functions). In Canadian mode, the Reset feature is unavailable. The programming option will change to **LMP BTN ENABLE** in Canadian applications. Pressing 2 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between **Lmp Btn Enable Yes** (the ANN-100 will perform a local test of all LEDs) and **Lmp Btn Enable No**.

The **Drill Button Enable** (**DRL BTN ENABLE**) option allows the programmer to select whether the Drill button on any installed ANN-80 or ANN-100 annunciator will function normally or always be ignored. Pressing 3 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between **Drl Btn Enable Yes** (Drill button functions normally) and **Drl Btn Enable No** (Drill button never functions). In Canadian mode, the Drill feature is unavailable. The programming option will change to **SND BTN ENABLE** in Canadian applications. Pressing 3 while viewing the ANN-80/100 Options Screen #2 causes the display to toggle between **Snd Btn Enable Yes** (the ANN-100 will perform a test of its local sounder by turning it on for 5 seconds) and **Snd Btn Enable No**.

### 3.6.9 Password Change

The factory set passwords, which have been programmed into the control panel, can be changed by selecting the Password Change option. Pressing 1 while viewing Programming Screen #4 will cause the following screen to be displayed:

Press 1 to change the Master Programming Level password, 2 to change the Maintenance Level password or 3 to change the Remote Download password. **Note that the passwords will not be displayed on LCD annunciators.**

The following screen will appear when any change option is selected:

A flashing cursor will appear in the center of the display. Enter a new eight digit password (such as 10101010 for the Master Level). After the eighth digit is entered, the following screen will be displayed:

Re-enter the new password to accept the change. The display will return to the initial Password Change Screen.

**Invalid Password**

If a password is entered incorrectly, the panel will display **Invalid Message** and a code.
The programmer may hit the escape key and re-enter the password correctly. However, if the password has been forgotten, record the 20-character code and contact Fire•Lite Technical Services. After proper authentication, the master password will be supplied to the programmer.

### 3.6.10 Clear Program

Pressing 2 while viewing Programming Screen #4, will select the Clear Program option. This will cause the LCD to display the following screen:

![Clear Program Screen](image)

Pressing 1, for Whole System while viewing the Clear Program Screen, will clear all general system programming options and all programmed addressable devices from the nonvolatile memory of the FACP. This function is useful when the control panel is first installed, prior to autoprogramming. Note that it is necessary to autoprogram after using the Clear Whole System function.

Pressing 2, for All Points while viewing the Clear Program Screen, will clear all programming related to the SLC loop and connected addressable devices.

Before executing any of the Clear commands listed above, the control panel will provide a warning to the user by prompting with the following display:

![Warning Screen](image)

Pressing 1 will cause the control panel to carry out the selected clear option. Pressing 2 will prevent programming from being cleared.

### 3.6.11 Program Check

The Program Check feature allows the programmer to view the zones which have been programmed to the Notification Appliance Circuits on the control panel but have not been programmed to Initiating Devices as well as other circuits with no input or output correlations. Pressing 3 while viewing Programming Screen #4 will cause the following screen to be displayed:

![Program Check Screen](image)

Pressing 1 while viewing the Program Check Screen will display an NAC screen similar to the following.

![NAC Screen](image)

The example above indicates that NAC 1 has been programmed to Zones 005, 010, 012, 015, and 017 but no input devices have been programmed to any of these zones. Use the up and down arrow keys to view all the NAC zones without input assignments for NAC 1 and NAC 2.

Pressing 2 while viewing the Program Check Screen #1 will display a screen similar to the following:

![Zone No Input Screen](image)

The Zone No Input screen allows the programmer to view the zones which have not been programmed to at least one input device (not including general alarm Zone 00). The example in the preceding screen indicates that Zones 005, 007, 009, 010 and 011 have been programmed to an addressable module (control module in this example) with an address of 001 on loop 1 but have not been programmed to any input devices. Use the up and down arrow keys to view all the zones without input assignments.

Pressing 3 while viewing Program Check Screen #1 will cause a screen similar to the following to be displayed:

![Zone No Output Screen](image)
The Zone No Output feature allows the programmer to view the zones which have not been programmed to at least one output device (not including general alarm Zone 00). The example in the preceding screen indicates that Zones 05, 07, 09, 10 and 11 have been programmed to an addressable detector with an address of 001 on loop 1 but have not been programmed to any output devices. Use the up and down arrow keys to view all the zones without output assignments.

3.7 Maintenance Programming Level

To access Maintenance Programming mode, press the Enter key. The LCD will display the following:

To enter the Maintenance Programming mode, press 2. The display will read as follows:

When the Maintenance level password (default 11111111) is entered, the following screen will appear:

Note that in the preceding screens, an arrow appears to inform the programmer that additional options can be viewed by pressing the keypad down arrow key, as shown in the following screen.

3.7.1 Disable Point

Pressing 1 for Point Program, while viewing Maintenance Screen #1 will cause the following screens to be displayed:

Select the device type by pressing 1 for an addressable detector or 2 for an addressable module. The operator will be prompted to enter the three digit device address as shown in the following example for a detector:

A flashing cursor will appear in the bottom left corner of the display, prompting for the three digit device address. When the third digit is entered, 001 for example, a screen will appear which will allow enabling or disabling of the selected point, as illustrated in the following example:

Pressing 1 repeatedly will cause the display to toggle between Enabled Yes and Enabled No.
### 3.7.2 History

Pressing 2 while viewing Maintenance Screen #1 will cause the following screen to be displayed:

<table>
<thead>
<tr>
<th>MAINT PROGRAMMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=POINT PROGRAM</td>
</tr>
<tr>
<td>2=HISTORY</td>
</tr>
<tr>
<td>3=PROGRAM CHECK</td>
</tr>
</tbody>
</table>

Maintenance Screen #1

The History feature allows the operator to view control panel events which have been stored in a history file in memory and erase the contents of the history file.

Pressing 1 while viewing the History screen will cause the following screen to be displayed:

<table>
<thead>
<tr>
<th>HISTORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=VIEW EVENTS</td>
</tr>
<tr>
<td>2=ERASE HISTORY</td>
</tr>
</tbody>
</table>

History Screen

To view all the events which have occurred in the control panel since the history file was last erased, press 1 while viewing the Events screen. To view only alarms which have occurred, press 2 while viewing the Events screen. To view events other than alarms, press 3. The most recent event will be displayed on the screen. To view all of the selected events, press the up or down arrow keys to scroll through the list of events. If no events have occurred, the display will read NO EVENTS IN HISTORY.

Pressing 2 while viewing the History Screen will cause the following screen to be displayed:

<table>
<thead>
<tr>
<th>ERASE HISTORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCEED ?</td>
</tr>
<tr>
<td>1=YES  2=NO</td>
</tr>
</tbody>
</table>

Erase History Screen

Pressing 1 while viewing the Erase History Screen will cause the message ERASING HISTORY, PLEASE WAIT to be displayed. The display will then return to the History Screen. Pressing 2 will cause the display to return to the History Screen without erasing the History file.

### 3.7.3 Program Check

Pressing 3 while viewing Maintenance Screen #1 will cause the following screen to be displayed:

<table>
<thead>
<tr>
<th>PROGRAMMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=POINT PROGRAM</td>
</tr>
<tr>
<td>2=HISTORY</td>
</tr>
<tr>
<td>3=PROGRAM CHECK</td>
</tr>
</tbody>
</table>

Maintenance Screen #1

The Program Check feature allows the programmer to view the zones which have been programmed to the Notification Appliance Circuits on the control panel but have not been programmed to Initiating Devices as well as other circuits with no input or output correlations. Pressing 1 while viewing Program Check screen will cause a screen similar to the following to be displayed:

<table>
<thead>
<tr>
<th>NACS NO INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAC 1 005 010 012 015 017</td>
</tr>
</tbody>
</table>

Program Check Screen #1

The example above indicates that NAC 1 has been programmed to Zones 005, 010, 012, 015, and 017 but no input devices have been programmed to any of these zones. Use the up and down arrow keys to view all the NAC zones without input assignments for both NAC 1 and NAC 2.

Pressing 2 while viewing the Program Check screen will display a screen similar to the following:

<table>
<thead>
<tr>
<th>ZONES NO INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>005 007 009 010 011 1M001</td>
</tr>
</tbody>
</table>

The Zone No Input screen allows the programmer to view the zones which have not been programmed to at least one input device (not including general alarm Zone 000). The example in the preceding screen indicates that Zones 005, 007, 009, 010 and 011 have been programmed to an addressable module (control module in this example) with an address of 001 on loop 1 but have not been programmed to any input devices. Use the up and down arrow keys to view all the zones without input assignments.
Pressing 3 while viewing Program Check screen will cause a screen similar to the following to be displayed:

![Zone No Output](image)

The Zone No Output feature allows the programmer to view the zones which have not been programmed to at least one output device (not including general alarm Zone 000). The example in the preceding screen indicates that Zones 005, 007, 009, 010 and 011 have been programmed to an addressable detector with an address of 001 on loop 1 but have not been programmed to any output devices. Use the up and down arrow keys to view all the zones without output assignments.

### 3.7.4 Walktest

To perform a walktest, press 1 while viewing Maintenance Screen #2. The following screen will be displayed:

![Walktest Screen](image)

The operator can press 1 to perform a silent walktest or 2 to perform an audible walktest. Pressing 1 or 2 will cause the control panel to enter Walktest Mode and will display the following screen:

![Unit In Walktest Screen](image)

From this screen, it is possible to view the walktest log, untested system points or a summary of the addressable devices tested during the current walktest. The user can select between any of these screens without interrupting the current walktest session. The walktest session will not end until the Unit In Walktest screen is exited by pressing the Escape key to return to the Walktest Screen.

Pressing 1 for View Walktest Log while viewing the Unit In Walktest screen will cause a screen similar to one of the following two screens to be displayed:

![No Events in Walktest Log](image)  OR  ![Alarm: Monitor](image)

If there are no events in the current walktest session, the first screen will be displayed, indicating no events have been stored in the walktest log. If any events have been stored, a screen similar to the second will be displayed indicating the latest event. As walktest events occur, the display will change to indicate the latest event. All stored events can be scrolled on the screen by pressing the up or down arrow keys. To return to the first event, press the 1st Event key.

Pressing 2 for View Points while viewing the Unit In Walktest screen will display one of the following screens:

![No Points in System](image)  OR  ![Untested Points](image)

If the system has no points installed, the first screen will be displayed. If points are installed, the second screen will be displayed, which allows the viewing of all untested system points and their status relating to the current walktest session. The up and down arrow keys will allow viewing of all untested points. If a point is tested while it is being displayed, the screen will update and display the next untested point. The first line indicates the total number of untested points. The second line displays information about an untested point. A description on the bottom of the screen will indicate if the displayed point has been disabled, if the Walktest option has been disabled for that point or if the point is not yet tested. The up and down arrow keys allow the user to scroll through all untested points.

Pressing 3 for View Summary while viewing the Unit In Walktest screen will display a new screen which will show a total of the tested detectors, tested modules, untested detectors and untested modules for the current walktest session.

To end the Walktest session, press the Escape key to return to the Walktest screen. Pressing 3 for View Results while viewing the Walktest screen, after a walktest session has been completed, will allow the operator to view the final results of the most recent walktest.
3.7.5 System

Pressing 2 while viewing Maintenance Screen #2, will display the following screen:

```
  1=NAC ENAB  1,2  
  2=REM SYNC ENAB YES
```

System Screen #1

Pressing 2 while viewing System Screen #1 will display the following:

```
  SYSTEM
  1=NACS ENAB  1,2  
  2=REM SYNC ENAB YES
```

System Screen #1

Pressing 1 while viewing NAC Screen #1 will cause the display to change to NAC1 Yes. This will allow the selected main circuit board NAC to activate its devices. Each press of the 1 key will cause the display to toggle between NAC1 Yes and NAC1 No. The same action is performed for the other NAC circuit by selecting the number of the desired output circuit.

To enable remote synchronization, press the 2 key while viewing System Screen #2. Each press of the key will toggle the screen between Rem Sync Enab Yes and Rem Sync Enab No.

Pressing 1 while viewing System Screen #2 will cause the following screen to be displayed:

```
  1=NACS ENAB  1,2  
  2=REM SYNC ENAB YES
```

System Screen #1

Pressing 1 while viewing NAC Screen #1 will cause the display to change to NAC1 Yes. This will allow the selected main circuit board NAC to activate its devices. Each press of the 1 key will cause the display to toggle between NAC1 Yes and NAC1 No. The same action is performed for the other NAC circuit by selecting the number of the desired output circuit.

To enable remote synchronization, press the 2 key while viewing System Screen #2. Each press of the key will toggle the screen between Rem Sync Enab Yes and Rem Sync Enab No.

Pressing 1 while viewing System Screen #2 will cause the following screen to be displayed:

```
  TIME AND DATE
  1=TIME  01:00 AM
  2=DATE  05-04-2017
  3=CLOCK FORMAT 12HR
```

Time and Date Screen

To change the time, press 1 to display the following screen:

```
  ENTER TIME
  01:00 AM
  1=AM  2=PM
```

Time Screen

A flashing cursor will appear on the left side of the display. Enter the four digit number corresponding to the time (0000 - 1259). When the fourth digit is entered, the cursor will move one position to the right. Press 1 for AM or 2 for PM to complete entering the time. The display will return to the Time and Date Screen displaying the new time.

To change the date, press 2 while viewing the Time and Date Screen. The following screen will be displayed:

```
  ENTER DATE
  MONTH DAY YEAR
  05-04-17
```

Date Screen

A flashing cursor will appear on the left side of the display. Enter the two digit month, two digit day and two digit year. The cursor will move one position to the right after each entry. When the fourth digit of the year has been entered, the display will return to the Time and Date Screen which will show the new date.

The clock can be configured to display 12 hour (AM & PM) or 24 hour (military) time. Pressing 3 while viewing the Time-Date screen will cause the display to toggle between 12HR and 24HR. Select 12HR for 12 hour display or 24HR for 24 hour display.

To enable the onboard battery charger, press the 2 key while viewing System Screen #2. Each press of the key will toggle the screen between Charger Enab Yes and Charger Enab No. The setting must say Charger Enab No when an external battery charger is being used.

If a 4XTMF Transmitter Module is installed in the system, supervision must enabled in user programming. Pressing 3 while viewing System Screen #2 will cause the display to toggle to 4XTM Spv Enb. Yes, which means there is a 4XTMF installed. Each press of the 1 key will cause the display to toggle between 4XTM Spv Enb. No and 4XTM Spv Enab. Yes.
3.7.6 Zone Setup

Pressing 3 while viewing Maintenance Screen #2 will display the following screen:

![Zone Setup Screen]

Pressing 1 while viewing Zone Setup screen will display the following screen:

![Enable Screen]

A flashing cursor appears to the right of the Z. To enable a zone, enter the three digit zone number (000 - 049). After the second digit is entered, the zone will be enabled and the cursor will return to the original position. The next zone to be enabled can then be entered. Press Esc (Escape) to return to the previous screen.

Pressing 2 while viewing Zone Setup screen will display the following screen:

![Disable Screen]

A flashing cursor appears to the right of the Z. To disable a zone, enter the three digit zone number (000 - 049). After the second digit is entered, the zone will be disabled and the cursor will return to the original position. The next zone to be disabled can then be entered. Press Esc (Escape) to return to the previous screen.

Pressing 3 while viewing Zone Setup screen will display the following screens:

- **Special Purpose Zone Screen #1**
  - Zones 047, 048, 049, and 046 can be programmed for normal zone operation or for special purpose applications. In the above illustration, the four zones are shown Off, which means they can be programmed to function in the same manner as all other zones, by assigning them to input and output devices in the Programming Zone Assignment Screen.
  - Pressing 1 will cause the display to change to **PAS 47 On**. Each press of the 1 key will cause the display to toggle between **PAS 47 On** and **PAS 47 Off**. When Zone 047 is programmed On, a PAS (Positive Alarm Sequence) activation of any smoke detector will cause Zone 047 to activate. By assigning Zone 047 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a PAS condition in the control panel. **Do not assign Zone 047 to a Notification Appliance Circuit when using this zone to indicate a PAS condition.**
  - Pressing 2 will cause the display to change to **Pre-signal 48 On**. Each press of the 2 key will cause the display to toggle between **Pre-signal 48 On** and **Pre-signal 48 Off**. When Zone 048 is programmed On, a Pre-signal activation of any device will cause Zone 018 to activate. By assigning Zone 048 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a Pre-signal condition in the control panel. **Do not assign Zone 048 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition.**
  - Pressing 3 will cause the display to change to **Two Stage 49 On**. Each press of the 3 key will cause the display to toggle between **Two Stage 49 On** and **Two Stage 49 Off**. Refer to “Two Stage Operation” on page 75 for a description of this feature.

- **Special Purpose Zone Screen #1**
  - Pressing 1 while viewing the Special Purpose Zone Screen #2 will cause the display to change to **Local Alm 46 On**. Each press of the 1 key will cause the display to toggle between **Local Alm 46 On** and **Local Alm 46 Off**. When Zone 046 is programmed On, a Local Alarm activation of any smoke detector will cause Zone 046 to activate. By assigning Zone 046 to a control module in the Programming Zone Assignment Screen, an output device connected to the control module can be used to indicate a local alarm condition in the control panel. **Local Alarm Zone alarms are not reported to the Central Station.**
Section 4: Operating Instructions

4.1 Panel Control Buttons

4.1.1 Acknowledge
The first press of the Acknowledge key silences the piezo sounder, changes flashing LEDs to steady, and also changes the status field on the LCD display from capital letters to small letters. When the piezo is silenced, an acknowledge message is sent to the printer and the history file. Acknowledge also sends a silence piezo command to the optional annunciators connected to the FACP.

When more than one event exists, the first press of the Acknowledge key functions as described in the preceding paragraph. Subsequent pressing of the key steps through each off-normal active event, with alarm events having a higher priority than trouble and supervisory events.

4.1.2 Alarm Silence
The Alarm Silence key performs the same functions as Acknowledge/Step. In addition, if an alarm exists, it turns off all silenceable NACs (Notification Appliance Circuits) and causes the Alarm Silenced LED to turn on. It also sends an ‘alarm silenced’ message to the printer, history file and optional annunciators. A subsequent new alarm will resound the system NACs. Note that the Alarm Silenced LED is turned off by pressing the Reset key, the Drill key or subsequent activation of the NACs.

4.1.3 Drill/Hold 2 Sec
When the Drill key is held for a minimum of two seconds (time required to prevent accidental activations), the FACP turns on both main panel NAC outputs and all silenceable circuits such as control modules that are programmed as silenceable, and turns off the Alarm Silenced LED if it was previously on. The EVAC IN SYSTEM message is shown on the LCD display. The same message is sent to the printer and history file. The Alarm Silence key can be used to turn off both silenceable NAC outputs following activation by the Drill key.

4.1.4 Reset
Pressing and releasing the Reset key turns off all control modules and NACs, temporarily turns off resettable power to 4-wire detectors, causes a RESET IN SYSTEM message to be displayed on the LCD and sends the same message to the printer and history file. It also performs a lamp test by turning on all LEDs (except the Ground LED), piezo sounder and LCD display segments after the Reset key is released. Any alarm or trouble that exists after a reset will resound the system.

4.1.5 Function Keys F1-F4
The four function keys are user programmable. These keys can be programmed to allow rapid disable/enable of various fire panel inputs and outputs during scheduled maintenance. Refer to “Function Keys” on page 70 for instructions on programming. Slide-in labels are provided on page 159.

4.2 LED Indicators
The 11 LED indicators, which are located on the front panel, operate as follows:

Fire Alarm
This red LED flashes when one or more alarms occur. It illuminates steady when the Acknowledge/Step or Alarm Silence key is pressed. The Fire Alarm LED turns off when the Reset key is pressed. The LED will remain off if all alarms have been cleared.

CO Alarm
This red LED flashes when one or more alarms occur. It illuminates steady when the Acknowledge/Step or Alarm Silence key is pressed. The CO Alarm LED turns off when the Reset key is pressed. The LED will remain off if all alarms have been cleared.

AC Power
This is a green LED which illuminates if AC power is applied to the FACP. A loss of AC power will turn off this LED

Supervisory
This is a yellow LED that flashes when one or more supervisory conditions occur, such as a sprinkler valve tamper condition. It illuminates steady when the Acknowledge/Step or Alarm Silence key is pressed. It turns off when the Reset key is pressed and remains off if all supervisory alarms have been cleared.

Trouble
This is a yellow LED that flashes when one or more trouble conditions occur. It stays on steady when the Acknowledge/Step or Alarm Silence key is pressed. The LED turns off when all trouble conditions are cleared. This LED will also illuminate if the microprocessor watchdog circuit is activated.

Ground
This is a yellow LED that flashes to indicate a ground fault condition (zero impedance from the FACP to ground).

Battery
This is a yellow LED that flashes to indicate a low battery voltage condition.
**Disabled**
This is a yellow LED that flashes to indicate that a zone, NAC, detector or module has been temporarily disabled in programming by the user.

**Maintenance**
This is a yellow LED that flashes to indicate that a smoke detector requires cleaning or replacement due to an invalid chamber reading or excessive drift.

**Communication**
This is a yellow LED that flashes to indicate a communication fault, including loss of phone lines, communication failure with either Central Station, or total communication failure.

**Alarm Silenced**
This is a yellow LED that turns on after the Alarm Silence key is pressed while an alarm condition exists. It turns off when the Drill or Reset key is pressed.

### 4.3 Normal Operation

With no alarms or troubles in the system, the display message is *System Normal* along with the current time and date as shown below. To set the time and date, refer to the appropriate section in this manual.

```
SYSTEM NORMAL
10:00A 072016
```

The ES-50X performs the following functions at regular intervals while in Normal mode:
- Monitors AC input voltage and battery voltage
- Monitors and reports status of SLC loop, option cards, and control panel
- Polls all devices on the SLC loop and flashes each device LED while checking for valid replies, alarms, troubles, etc.
- Refreshes LCD display and updates time
- Scans control panel keypad for key presses
- Performs autotest for all SLC devices
- Tests memory
- Updates and reads all communications buses

### 4.4 Trouble Operation

With no alarms in the system, the detection of a trouble will cause the following:
- The piezo to pulse 1 second On and 1 second Off
- The system Trouble LED to flash one second On and one second Off
- The trouble relay to activate
- *TROUBL* with device type, noun/adjective, address and trouble description will appear on the LCD display
- The same message, along with the time and date, is sent to the optional printer and the history buffer.
- Communicate the trouble conditions to the Central Station
- Terminate upload or download communications

Note that specific troubles will initiate additional actions; for example, loss of AC power will turn off the AC Power LED, a ground fault will turn on the Ground LED, etc.

**Addressable Smoke Detectors, Monitor Modules and Control Modules**

For addressable devices connected to the SLC loop, the following is a typical message that could appear on the LCD display for a device trouble:

```
TROUBL SMOKE <PHOTO> <ADJ> <NOUN>
INVREP
10:00A 010816 1D001
```

The information displayed in the above example provides the following information:
- First line in display:
  - ✓ The type of event; in this example *TROUBL* indicating a device trouble
  - ✓ Device type identifier; in this example, *SMOKE (PHOTO)* indicates a Photoelectric smoke detector. Other device type identifiers which can be displayed include *SMOKE (ION)* for Ionization Detector, *HEAT* for Heat Detector, *CONTROL* for Control Module and *MONITOR* for Monitor Module, *PULL STATION* for a manual pull box, etc. Refer to “Edit Detector” on page 52, “Edit Module Screen for Monitor Module” on page 58 and “Edit Module Screen for Control Modules” on page 63 for information on additional device types.
- Second line in display:
  - ✓ `<ADJ>`: refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
4.5 Alarm Operation

Alarm operation is similar to trouble operation with the following differences:

- The piezo sounder produces a steady output as opposed to a pulsed output
- The Fire Alarm LED flashes 1 second On and 1 second Off
- The LCD displays Alarm along with the device name, type, address, adjective/noun, associated zones and time/date
- Communicate the alarm to the Central Station
- Alarms latch and are not allowed to clear automatically
- Alarms activate software zones if so programmed
- Timers for Silence Inhibit, Autosilence, and Trouble Reminder are started
- Alarms activate the general alarm relay and general alarm zone Z000
- The trouble relay is not activated
- Store event in history buffer
- Terminate upload or download communications
- Alarms must be Acknowledged before the FACP can be reset

A typical alarm display would be as illustrated below:

![Alarm Pull Station Display](attachment:image.png)

Note that the device type, which in this example is PULL STATION, can be any other programmable alarm type.

The information displayed in the above example provides the following information:

- First line in display:
  - ✓ The type of event; in this example ALARM indicating an alarm condition
  - ✓ Device type identifier; in this example, PULL STATION indicates a manual pull box. Other device type identifiers which can be displayed include SMOKE (ION) for Ionization Detector, HEAT for Heat Detector, CONTROL for Control Module and MONITOR for Monitor Module, PULL STATION for a manual pull box, etc. Refer to “Edit Detector” on page 52, “Edit Module Screen for Monitor Module” on page 58 and “Edit Module Screen for Control Modules” on page 63 for information on additional device types.
- Second line in display:
  - ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
  - ✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
4.6 CO Alarm Operation

NOTE: When using carbon monoxide detection the system must be monitored by a Supervising Station, meeting the Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, NFPA 72.

When a CO alarm operation occurs:
- The piezo sounder produces a steady Temporal 4 output
- The CO Alarm LED flashes 1 second On and 1 second Off
- The LCD displays CO Alarm along with the device name, type, address, adjective/noun, associated zones and time/date
- Communicate the CO alarm to the Central Station
- CO alarms latch and are not allowed to clear automatically
- CO alarms activate software zones if so programmed
- Timers for Silence Inhibit, Autosilence, and Alarm Reminder are started
- CO alarms activate the relays programmed for CO alarm
- The trouble relay is not activated
- Store event in history buffer
- Communicate the CO alarm to the Central Station
- CO alarms must be Acknowledged before the FACP can be reset

A typical CO alarm display would be as illustrated below:

```
ALARM CAR MONOXIDE
<ADJ> <NOUN>
Z002
10:00A 090816 1M001
```

The information displayed in the above example provides the following information:
- First line in display:
  - The type of event; in this example ALARM indicating a CO alarm condition
- Second line in display:
  - <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
  - <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
- Third line in display: Z002 indicates the zone programmed to this device which, in this example, is general alarm Zone 002. Note that a single device can be programmed to five different zones but only the first zone will be displayed.
- Fourth line in display:
  - Time; the current time in this example is 10:00A which represents 10:00 AM
  - Date; the current month, day and year in this example is 09 for September, 08 for the 8th day of the month and 16 for the year 2016
  - Device Address; 1M001 in this example 1 represents SLC Loop, M represents a module and 001 represents device address 001

4.7 Supervisory Operation

Supervisory operation is similar to alarm operation but with the following differences:
- The piezo sounder pulses ½ second On and ½ second Off
- The Supervisory LED flashes ½ second On and ½ second Off
- The LCD displays the status label Active Supervisory along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the supervisory condition to the Central Station
- The supervisory relay is activated
- The alarm relay is not activated
- Silenced alarms are resounded
- Timers are not started
- Store event in history buffer
- Terminate upload or download communications
A typical Supervisory event would be displayed as illustrated in the following:

Note that, like alarms, supervisory signals latch (except when programmed for supervisory autoresettable) and can be assigned to software zones. Supervisory alarms do not cause resound as do other alarm conditions. Open circuits in supervisory wiring are processed by the control panel the same way as other trouble conditions. Refer to “Alarm Operation” on page 105, for a description of the information displayed on the control panel LCD.

4.8 Process Monitor Operation

Process Monitor operation will initiate the following events:
- The piezo sounder pulses ¼ second On and ¼ second Off
- The LCD displays a process monitor message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the process monitor condition to the Central Station (if the default event code has been changed from 000 to a reportable event code)
- Relays programmed for process monitoring will be activated
- The alarm relay is not activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the ANN-LED annunciator (required for this application)
- Each ANN-LED can support up to 10 zones.

Note that, like supervisories, process monitor signals latch (except when programmed for process monitor autoresettable) and can be assigned to software zones.

4.9 Hazard/Tornado Condition Operation

Hazard/Tornado operation is intended for Manual activation.

Hazard/Tornado Condition operation will initiate the following events:
- The piezo sounder pulses 1/4 second On, 1/4 second Off
- The LCD displays a hazard message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the hazard condition to the Central Station (if the default event code has been changed from 000 to a reportable event code)
- Relays programmed for hazard will be activated
- The alarm relay is not activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the ANN-LED annunciator (required for this application)
- Each ANN-LED can support up to 10 zones.

Hazard conditions latch. They can be assigned to software zones.

4.10 Medical Alert Condition Operation

Medical alert operation is:
- not intended for nurse call stations (applications) per UL1069.
- not intended for signaling professional medical staff.
- to be used for summoning security guards or other trained personnel within the facility
- intended for Manual activation.

Medical Alert Condition operation will initiate the following events:
- The piezo sounder pulses 1/4 second On, 1/4 second Off
- The LCD displays a medical alert message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the medical alert condition to the Central Station
- Relays programmed for medical alert will be activated
- The alarm relay is not activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
NAC Operation

There are two programmable NACs (Notification Appliance Circuits) resident on the ES-200X main circuit board. Both NACs may be programmed as silencable or nonsilencable and may also be programmed for steady or coded operation. Coded operation provides a choice between March Time, Temporal or California coding.

Programmed Zone Operation

Each addressable detector and monitor module can be assigned to a maximum of five software alarm zones. A general alarm zone Z000 may be listed for output (control) points, but it is not necessary to list Z000 for input points, since this is the default zone for all alarm input devices. Zone Z000 is not activated by supervisory points.

When an input device alarms and is not disabled, it activates all software zones assigned to it. An output device that is not disabled is turned on when any of the software zones to which it is programmed become active. Only alarms, hazards/tornado alerts can turn on either of the two main NACs.

Disable/Enable Operation

Input points which are disabled do not cause an alarm or any zone activation. Disabled output points are held in the off state. All disabled points are treated as if they were in trouble, with the exception being the status label that will be displayed is DISABL.

Waterflow Circuits Operation

If an alarm exists from a monitor module point that has a waterflow type code and its mapped NAC control module outputs are programmed for nonsilenceable operation, the Alarm Silence key will not function. Also, any output zone activated by a waterflow device will not be silenceable if the Waterflow Silenceable option is set to NO in system programming.

Detector Functions

Maintenance Alert

Each addressable detector is monitored by the control panel for its maintenance status. If a detector is near but below the allowed alarm limit, a ‘maintenance alert’ message will automatically be displayed, signaling that the detector is in need of servicing.

Automatic Test Operation

An automatic test of an addressable detector is performed each minute, resulting in a complete SLC loop test in approximately 5 hours (if the loop has the maximum number of devices installed). The detector’s sensing chamber and electronics are functionally tested for normal, safe operation. A trouble message is displayed upon failure of this test. A System Reset will clear this trouble.

Type Code Supervision

The FACP monitors addressable hardware device codes at slow intervals. Mismatch of any type code, compared to the system program, will cause a device trouble.

System Alarm Verification

The control panel may be programmed to perform alarm verification to help eliminate the nuisance of false alarms. Alarm verification applies to smoke detectors only.

Smoke Detector Data

Smoke detector data is monitored by the FACP, eliminating the need to test the sensitivity of each detector at its location. A printout of each detector’s data can be retrieved from the FACP using an optional printer or Windows® HyperTerminal. Detector sensing ability can decrease with age and should be monitored as part of a system’s routine maintenance.

Time Functions: Real-Time Clock

The ES-50X includes a crystal-based clock that provides time of day, date and day of week. Time is displayed as 12 or 24 hour time with month/day/year and is stored in RAM. Daylight savings time change-over is programmable and automatic. If both AC and battery are lost, the time must be reset.

Synchronized NAC Operation

Synchronization is a panel feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. This is particularly critical when activating strobes which must be synchronized to avoid random activation and a potential hazard or confusion. The FACP can be programmed to operate with a variety of manufacturer’s devices. NAC synchronization can only be supported properly by the Remote Power Supply Sync Terminal, which follows NAC 1 programming.
4.18 Coded Operation

The NAC circuits resident on the control panel main circuit board can be programmed for coded operation. The available pulse rates which can be programmed for coded operation are as follows:

- **Continuous**: Steady output with no pulsing
- **March Time**: Pulses at 120 ppm (pulses per minute)
- **Temporal 3 Code**: Pulses at 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second Off, 1/2 second On, 1-1/2 second Off
- **Temporal 4 Code**: Pulses at 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second On, 1/2 second Off, 1-1/2 second Off
- **California Code**: 10 seconds On, 5 seconds Off
- **Two-Stage**: Pulses at 20 ppm (pulses per minute) for 3 or 5 minutes (depending on programming) and then changes to Temporal

4.19 Presignal

Presignal option programs an initiating device to delay the activation of NACs and/or control modules while allowing visual verification by a person. Once a detector or monitor module triggers an alarm, the onboard piezo sounds immediately, but the NACs are not activated for a user programmed time duration of up to three minutes. Note that the alarm relay and communicator will respond to the initial alarm immediately. In addition, Zone 048 will activate. This zone can be programmed to a control module which may be used to activate a sounder or indicator which the installer designates as a Presignal indication. *Do not assign Zone 048 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition.*

After the programmed delay, the NACs will activate if the source of the alarm is not cleared. Note that if a second alarm occurs during the programmed time delay, the alarm will be processed immediately, causing activation of the appropriate output zones. The events which occur upon Presignal activation are as follows:

- ✓ onboard piezo sounds immediately
- ✓ control panel LCD display will indicate a presignal event and the active point
- ✓ control points programmed to Zone 048 will activate
- ✓ annunciators (if enabled) will sound the local piezo, and pulse the alarm LED and zone LED
- ✓ outputs (NACs and control modules) of associated zones will be inhibited from activating for a user programmed time delay of up to three minutes
- ✓ second alarm occurring anytime during the time delay will cause immediate activation of all associated outputs

Presignal does not affect monitor modules programmed as waterflow, supervisory, process monitoring or remote switches. *Presignal operation requires the approval of the local Authority Having Jurisdiction.*

4.20 Positive Alarm Sequence

PAS (Positive Alarm Sequence) option will program a smoke detector to delay panel activation (including alarm relay and communicator) for a period of 15 seconds. Zone 047, however, will activate immediately and may be used to connect a signaling device to indicate PAS activation. *Do not assign Zone 047 to a Notification Appliance Circuit when using this zone to indicate a PAS condition.*

When a detector triggers an alarm, the onboard piezo sounds immediately, but the NACs are prevented from activating for 15 seconds. This inhibit time is factory set and cannot be changed. Pressing the Alarm Silence or Acknowledge/Step key during the 15 second inhibit time will silence the piezo sounder and start a timer which prevents activation of NACs for an additional time duration which can be user programmed for up to three minutes. After the programmed delay, the NACs will activate if the source of the alarm is not cleared. Note that if a second alarm occurs during either time delay, the alarm will be processed immediately, causing activation of the appropriate output zones. The events which occur upon PAS activation are as follows:

- ✓ onboard piezo sounds immediately
- ✓ control panel LCD display will indicate a presignal event and the active point
- ✓ control points programmed to Zone 047 will activate
- ✓ outputs (NACs and control modules) of associated zones will be inhibited from activating for a factory set duration of 15 seconds
- ✓ pressing the Alarm Silence or Acknowledge/Step key will start a timer which inhibits output activation for additional time delay of up to three minutes which is user programmable
- ✓ second alarm occurring anytime during either time delay will cause immediate activation of all associated outputs

PAS operation requires the approval of the local Authority Having Jurisdiction.

Note that the **PAS BYPASS** monitor type code, when activated, will inhibit the PAS capability until the **PAS BYPASS** monitor is deactivated. While PAS is inhibited, signaling devices will immediately place the control panel into alarm. This feature may be employed by wiring a normally open device, such as a switch, to a monitor module which has been programmed for **PAS BYPASS**.
4.21 Special System Timers

4.21.1 Silence Inhibit Timer
This option, if selected, prevents the Alarm Silence key from functioning for 5 minutes following an alarm. A new alarm during the initial 5 minute period will not cause the timer to restart with a new 5 minutes. Silence Inhibit operation requires the approval of the local Authority Having Jurisdiction.

4.21.2 Autosilence Timer
If Autosilence is selected, the notification appliances, programmed as silenceable, will automatically be silenced after a programmable duration of 5 to 30 minutes. Pressing the Drill key will restart the timer. Autosilence operation requires the approval of the local Authority Having Jurisdiction.

4.21.3 Trouble Reminder
If selected, this feature causes a reminding ‘beep’ every 15 seconds during an alarm (after the Alarm Silence key is pressed) and every two minutes during a trouble condition (after the Acknowledge/Step or Alarm Silence key is pressed). The ‘beeps’ from the onboard piezo sounder will occur until the alarm or fault is cleared.

Note that if the trouble is not cleared within 24 hours, the piezo will resound, indicating that the trouble condition still exists.

4.21.4 Waterflow Retard Timer
If selected, this option will delay the activation of a waterflow type alarm for a programmable time duration from 1 to 90 seconds. This delay is in addition to any time delay inherent in the waterflow device. This feature requires the approval of the local Authority Having Jurisdiction.

4.21.5 Alarm Verification (None or One Minute)
If alarm verification is selected, an addressable smoke detector's alarm is ignored for a retard time of 13 seconds and the detector's alarm condition is automatically reset. There will be no alarm indication at the FACP during the Retard period. A confirmation period of 60 seconds follows, during which a subsequent alarm from the same detector will cause the panel to immediately activate the appropriate outputs and indicate the alarm condition at the FACP. If a different detector alarms any time during the first detector's verification period, the panel will immediately activate all appropriate outputs and indicate the alarm condition at the FACP. If no additional detector alarms occur within 73 seconds of the first alarm (13 second retard plus 60 second confirmation), the timer resets and the panel is ready to verify any new detector alarms which may occur. The following is a graphic representation of Alarm Verification.

4.21.6 Control Module Delay Timer
The control module delay feature, if enabled, will delay activation of a control module after a programmed time of 1-180 seconds after being triggered by an alarm condition. This feature requires the approval of the local Authority Having Jurisdiction. Refer to the table on page 47 for permissible settings.

4.22 Walktest
Walktest is a feature which allows one person to test the fire alarm system. An audible walktest will momentarily sound the Notification Appliance Circuits in the building and store the walktest information in a file at the panel. A silent walktest will not sound the NACs but will store the walktest information in a file which can be viewed at the panel. Disabled NAC devices will not activate during walktest.

NOTE: Alarm Verification is available only for addressable smoke detectors, not conventional smoke detectors.
**Alarm/Shorted Condition**

When in audible Walktest, the panel responds to each new alarm and activates its programmed control outputs for four seconds, if those outputs have been programmed for silenceable activation. It also stores each alarm in the walktest history file which can be sent to an optional printer. The stored display will be the same as if the device actually activated except the colon (:) in the time stamp is replaced with an asterisk (*).

Note that if the system under test includes one or more enabled monitor modules, the following may apply:

If the monitor module is used for a supervised, 2-wire smoke zone, alarming any monitor module in the system will result in the activation of programmed control outputs for an additional eight seconds or less. This is caused by the temporary removal of 24 VDC resettable power from the monitor module. The monitor module reports this loss of power as an open condition in addition to the alarm condition.

**Open Condition**

Addressable devices are monitored for fault conditions during Walktest mode. When a new trouble condition occurs, the FACP will activate all NACs and control modules programmed for Walktest and mapped to the faulty device, then shut them off after eight seconds.

While in Walktest, the trouble relay is activated and the system Trouble LED flashes (as in all of the Program and status change operations). The alarm relay is not activated.

### 4.23 Read Status

Read Status functions do not require a password. The control panel will continue to provide fire protection while in Read Status mode. This mode can be entered while the control panel is in alarm or trouble. If a new alarm or trouble occurs during these functions, the Read Status is exited to prevent confusion.

**Read Status Entry**

When the operator presses the control panel ENTER key, the LCD will display the following:

```
1=READ STATUS MODE
2=PROGRAMMING MODE
3=FSTOOL UP/DOWNLOAD
4=USB UP/DOWNLOAD
```

Pressing 1, while this screen is being displayed, will cause the control panel to enter the Read Status mode which allows the user to view and print the programmed features and status of the control panel.

The following screens will be displayed:

- **Read Status Screen #1**
  
  READ STATUS
  
  1=SYSTEM POINT
  2=ZONES

- **Read Status Screen #2**
  
  READ STATUS
  
  1=TROUBLE REMINDER
  2=TIMERS
  3=NACS

- **Read Status Screen #3**
  
  READ STATUS
  
  1=RELAYS
  2=PROGRAM CHECK
  3=HISTORY

- **Read Status Screen #4**
  
  READ STATUS
  
  1=ANNUNCIATORS
  2=COMMUNICATOR

- **Read Status Screen #5**
  
  READ STATUS
  
  1=FUTURE USE
  2=TIME/DATE

- **Read Status Screen #6**
  
  READ STATUS
  
  1=CHARGER ENAB
  2=4XTM SPV ENAB
  3=REM SYNC ENAB

### 4.23.1 System Point

Pressing 1 while viewing Read Status Screen #1 will cause the following screen to be displayed:

```
READ SYSTEM POINT
SELECT TYPE
1=DETECTOR
2=MODULE
```

The operator selects the type of device which is to be viewed by pressing 1 for Detector or 2 for Module. If 1 is pressed, the display will change to the following screen:

```
READ SYSTEM POINT
ENTER DETECTOR#
***
```
Entering the three digit detector address will cause the control panel to display the current status of the selected device. For example, if a detector with address 001 on the SLC loop is entered, a display similar to the following will appear:

![Device Display Example]

The information in the preceding display includes:

- **NORMAL** - the present status (could also be ALARM, TROUBL, DISABL, etc.)
- **SMOKE (PHOTO)** - the device type which is a photoelectric smoke detector (could also be ION for ionization smoke detector)
- **NORTH CLASSROOM** - the Adjective/Noun label for this device
- **Z005** - the first of five possible assigned software zones
- **1D001** - I = SLC Loop, D = Detector, 001 = Address 001
- V - Alarm Verification Enabled (V = Yes, * = No)
- S - Silenceable for control modules (S = Yes, * = No)
- W - Walktestable for control and monitor modules (W = Yes, * = No)

Pressing the down arrow key, while viewing the screen shown above, will allow the operator to view additional programming information about the selected device, such as:

- Enable/Disable Status
- Device Type
- Alarm Verification On/Off (for detectors)
- Walktest Yes/No
- PAS (Positive Alarm Sequence) Yes/No (for detectors only)
- Pre-Signal Yes/No (for detectors and monitor modules)
- Zone Assignments (five maximum)
- Chamber Value
- Adjective/Noun descriptor
- Silenceable Yes/No (for control modules)
- Wireless Yes/No (for detectors only)
- Sounder Base Yes/No (for detectors only)
- Sounder Base Values and Zone Assignments (for detectors only)

### 4.23.2 Zones

Pressing 2 while viewing Read Status Screen #1 will cause the following screens to be displayed:

![Zones Screens Example]

From the preceding screens, the control panel operator can view:

- **Zones Installed** - all software zones programmed into the system (49 maximum)
- **Zones Enabled** - all software zones that are enabled
- **Zones Disabled** - all software zones that have been disabled
- **Special Purpose** - on or off programming for Special Purpose Zones 047 reserved for PAS, 048 reserved for Pre-signal, 049 reserved for Two Stage, and 046 for Local Alarm
- **Zone Type** - the Type assigned to each installed zone (default is Alarm)

### 4.23.3 Trouble Reminder

Pressing 1 while viewing Read Status Screen #2 will display the following screen:

![Trouble Reminder Screen Example]

The screen indicates whether the Trouble Reminder feature is set to sound every 4 or 24 hours.
4.23.4 Timers
Pressing 2 while viewing Read Status Screen #2 will cause the following Timer screens to be displayed:

```
TIMERS
PAS DELAY 000
PRE SIGNAL 000
WATERFLOW 000
TIMERS
AC LOSS DELAY 2
CON MOD DLY 000
```

These screens will indicate the delay time, in seconds, for each of the first three and last possible delay options. The AC Loss Delay time is displayed in hours.

4.23.5 NACs
Each NAC can be programmed individually with unique settings with the exception of Canadian Mode. When the Canadian Option is selected in programming (see “Canadian Option” on page 77), all NAC settings are changed to that of NAC 1. While in Canadian Mode, if any NAC is setting is changed, all NACs will get those same settings. Pressing 3 while viewing Read Status Screen #2 will display the following screen:

```
NAC
1=NAC 1
2=NAC 2
```

The operator can press 1 to view the programmed options for NAC 1, or 2 to view the programmed options for NAC 2. The resulting screens will display the following information:
- Enable/Disable Status
- Circuit Type (Bell, Strobe, etc.)
- Silenceable/Nonsilenceable
- Auto Silence Enable/Disable and time delay (in minutes)
- Coding Selection (Temporal, Steady, etc.)
- Zone Assignments
- Silence Inhibit Enabled/Disabled
- Synchronization Type (System Sensor, Wheelock, or Gentex)

4.23.6 Relays
Pressing 1 while viewing Read Status Screen #3 will display the following screen:

```
RELAY
1=RELAY 1
2=RELAY 2
3=RELAY 3
```

The operator can view the programmed option for each relay by pressing the corresponding number key.

4.23.7 Program Check
Pressing 2 while viewing Read Status Screen #3 will cause a screen similar to the following to be displayed:

```
PROGRAM CHECK
1=NACS NO INPUT
2=ZONES NO INPUT
3=ZONES NO OUTPUT
```

Pressing 1 while viewing Program Check screen #1 will display a screen which will indicate if any input zones have not been programmed to one of the Notification Appliance Circuits. Use the up and down arrow keys to view both NAC circuits.

Pressing 2 while viewing the Program Check screen #1 will display a screen which will indicate if any output zones have not been programmed to at least one input zone. Use the up and down arrow keys to view all zones.

Pressing 3 while viewing the Program Check screen #1 will display a screen which will indicate if any input zones have not been programmed to at least one output zone. Use the up and down arrow keys to view all zones.

4.23.8 History
Pressing 3 while viewing Read Status Screen #3 will display the following screen:

```
HISTORY
1=VIEW ALL
2=VIEW ALARMS
3=VIEW OTHER EVENTS
```
The operator can view all events which have been stored in the history file, only alarms or other events, such as troubles or supervisories, by pressing the corresponding number key.

### 4.23.9 Annunciators

Pressing 1 while viewing Read Status Screen #4 will display the following screens:

![Annunciator Screen](image1)

Pressing 1 or 2 for ANN-BUS while viewing the Annunciator Screen allows the operator to view the settings and devices for each ANN-BUS. Press 1 for the Primary ANN-BUS and 2 for the Secondary ANN-BUS.

![ANN-BUS Screen #1](image2)

The ANN-BUS Screen #1 indicates if the ANN-BUS has been enabled Yes or disabled No.

Pressing 2 for Modules Installed while viewing ANN-BUS Screen #1 will display screens for ANN-BUS Addresses 1 - 8 and the devices installed at each address. A subscreen will display the options that have been programmed for each device.

![ANN-BUS Screen #2](image3)

Pressing 3 for ANN-BUS Options while viewing the Annunciator Screen allows the operator to view the settings for any ANN-S/PG, ANN-LED, ANN-80, and ANN-100 installed in the system.

Pressing 1 for ANN-S/PG Options while viewing ANN-BUS Screen #2 will display the options selected for the installed ANN-S/PG annunciators.

Pressing 2 for ANN-LED Options while viewing ANN-BUS Screen #2 will display the options selected for the installed ANN-LED annunciators.

Pressing 3 for ANN-80/100 Options while viewing ANN-BUS Screen #2 will display the options selected for the installed ANN-80 or ANN-100 annunciators.

### 4.23.10 Communicator

Pressing 2 while viewing Read Status Screen #4 will display the following screens:

![Communicator Screen #1](image4)

The Communicator Screen #1 indicates if an IPOTS-COM has been installed Yes or No.

Pressing 2 for POTS Settings while viewing Communicator Screen #1 will display settings for the telephone portion of the Communicator.

![POTS SETTINGS](image5)

Pressing 1 or 2 will display whether each phone line is enabled Yes or disabled No, whether the phone type is touchtone or rotary, and whether the phone line is being supervised Yes or No.

Pressing 3 will display the phone lines’ Gains setting. The value for the Dialing Gains and Reporting Gains is shown as High, Normal, or Low.
Pressing 3 for **IP Settings** while viewing Communicator Screen #1 will display settings for the ethernet portion of the Communicator. The screen will indicate if DHCP has been enabled **Yes** or disabled **No**. If the DHCP has not been enabled, the Static Settings will be displayed.

Communicator Screen #2 allows the programmer to press 1 to view the **Primary Communication Path settings** or 2 to view the **Secondary (backup) Communication Path settings** for the Communicator and indicates the Call Limit for Communicator trouble calls within a 24 hour period.

Pressing 1 while viewing Communicator screen #2 will cause the following screen to be displayed:

Pressing 1 for **POTS** indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as:

- Account Code
- Phone Number Prefix
- Phone Number
- Communication Format

Pressing 2 for **Ethernet** indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as CS account info.

Pressing 3 for **Cellular** indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as the CS account.

Communicator Screen #3 allows the user to view the Event Codes for the chosen communication format as well as the Test Time Interval and 24 Hour Test Time.

Communicator Screen #4 allows the user to view whether the reporting style is by **Point or Zone**.

### 4.23.11 Print

To print program data or control panel status, press 2 while viewing Read Status Screen #5. The following screens will be displayed:

Pressing 1 while viewing Print Screen #1 allows the user to print the History file which will detail all of the system activities since the file was last cleared from memory.

Pressing 2 while viewing Print Screen #1 allows the user to print the Walktest log which will detail all of the system activations during walktest since the log was last cleared.

Pressing 3 while viewing Print Screen #1 allows the user to print the Walktest summary which will list the total of each type of input activation.

Pressing 1 while viewing Print Screen #2 allows the user to print the detector data for each addressable smoke detector connected to the system. A printout, similar to the following example, will be generated if an optional printer is connected to the FACP.

<table>
<thead>
<tr>
<th>DEVICE #</th>
<th>DEVICE TYPE</th>
<th>% DRIFT COMP</th>
<th>CHAMBER</th>
<th>TIME/DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1D001</td>
<td>SMOKE (PHOTO)</td>
<td>20</td>
<td>1281</td>
<td>12:01 AM 01-08-2016</td>
</tr>
<tr>
<td>1D002</td>
<td>SMOKE (PHOTO)</td>
<td>20</td>
<td>1281</td>
<td>12:01 AM 01-08-2016</td>
</tr>
<tr>
<td>1D003</td>
<td>SMOKE (PHOTO)</td>
<td>21</td>
<td>1259</td>
<td>12:01 AM 01-08-2016</td>
</tr>
<tr>
<td>1D004</td>
<td>SMOKE (PHOTO)</td>
<td>20</td>
<td>1309</td>
<td>12:02 AM 01-08-2016</td>
</tr>
<tr>
<td>1D005</td>
<td>SMOKE (PHOTO)</td>
<td>21</td>
<td>1281</td>
<td>12:02 AM 01-08-2016</td>
</tr>
<tr>
<td>1D006</td>
<td>SMOKE (PHOTO)</td>
<td>20</td>
<td>1322</td>
<td>12:02 AM 01-08-2016</td>
</tr>
<tr>
<td>1D007</td>
<td>SMOKE (PHOTO)</td>
<td>20</td>
<td>1280</td>
<td>12:02 AM 01-08-2016</td>
</tr>
<tr>
<td>1D008</td>
<td>SMOKE (PHOTO)</td>
<td>20</td>
<td>1215</td>
<td>12:02 AM 01-08-2016</td>
</tr>
</tbody>
</table>
Chamber Value

The Chamber value should be within the indicated range for the following smoke detectors:

- SD355CO, SD355(T/R), SD350(T), SD365(T/R), D350(R), and SD300(T) Addressable Photoelectric Smoke Detectors: 405 - 2100 (obscuration of 1.00%/ft to 3.66%/ft.)
- CP355, CP350, and CP300 Addressable Ionization Smoke Detectors: 750 - 2100 (obscuration of 0.50%/ft to 1.44%/ft.)

If the addressable smoke detector’s Chamber reading is not within the acceptable range, clean the detector and check the Chamber value again. If the reading is still not within the acceptable range, immediately replace the detector.

Drift Compensation

Drift compensation uses software algorithms that identify and compensate for long-term changes in the data readings from each addressable smoke detector. These long-term changes in detector data readings are typically caused by dirt and dust accumulation inside the smoke chamber. Drift compensation performs the following functions:

- Samples photoelectric smoke detectors every 6 seconds and ionization smoke detectors every 3 seconds
- Allows a smoke detector to retain its original ability to detect actual smoke and resist false alarms, even as dirt and dust accumulate
- Reduces maintenance requirements by allowing the control panel to automatically perform the periodic sensitivity measurements required by NFPA Standard 72

The FACP software also provides filters to remove transient noise signals, usually caused by electrical interference.

Maintenance Alert

The software determines when the drift compensation for a detector reaches an unacceptable level that can compromise detector performance. When a detector reaches an unacceptable level, the control panel indicates a maintenance alert. Table 4.1 summarizes the three levels of maintenance alert:

<table>
<thead>
<tr>
<th>Maintenance Level:</th>
<th>FACP Status Displays:</th>
<th>Indicates:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Chamber Value</td>
<td>INVREP</td>
<td>A hardware problem in the detector</td>
</tr>
<tr>
<td>Maintenance Alert</td>
<td>DIRTY1</td>
<td>Dust accumulation that is near but below the allowed limit. DIRTY1 indicates the need for maintenance before the performance of the detector is compromised</td>
</tr>
<tr>
<td>Maintenance Urgent</td>
<td>DIRTY2</td>
<td>Dust accumulation above the allowed limit.</td>
</tr>
</tbody>
</table>

Table 4.1  Maintenance Alert Levels

Figure 4.1 illustrates a graphic representation of the maintenance levels:

Figure 4.1 Diagram of Maintenance Levels

Pressing 2 while viewing Print Screen #2 allows the user to print the Communicator’s settings. Refer to “Communicator” on page 79 for additional information on the display.

Pressing 3 while viewing Print Screen #2 exits the user from the print menu.
4.23.12 Time-Date

The operator can view the daylight savings time and the month and week when daylight savings time will begin and end. Pressing 2 while viewing Read Status Screen #5 will display the following screens:

4.23.13 Battery Charger

Read Status Screen #6 indicates whether the onboard battery charger is enabled or disabled.

4.23.14 4XTM Supervision

Read Status Screen #6 indicates whether 4XTMF Supervision is enabled or disabled.

4.23.15 Remote Sync

Read Status Screen #6 indicates whether remote synchronization is enabled or disabled.
Section 5: Central Station Communications - POTS Transmission

The control panel transmits zone and system status reports to Central Stations via the public switched telephone network. Two supervised telephone line connections are made to interface the control panel to the telephone lines. Two optional 7 foot telephone cords are available for this purpose and can be purchased separately.

The control panel supervises both telephone lines for proper voltage. A delay of two minutes will occur before a fault in either phone line connection is reported as a trouble. When a fault is detected, an audible trouble signal will sound, the yellow trouble LED will blink, the LCD display will indicate the phone line trouble and the trouble condition will be reported to the Central Station over the remaining operational phone line.

The control panel comes with line seizure capability provided for both the primary and secondary telephone line interfaces. Any time that the control panel needs to make a call to a Central Station, line seizure will disconnect any local premises phones sharing the same telephone line.

All transmissions to the Central Stations will be sent over the primary phone line. In the event of noisy phone lines, transmissions will be sent over the backup secondary phone line.

Two phone numbers must be programmed, the primary Central Station phone number and the secondary Central Station phone number. All system reports will be transmitted to the primary Central Station phone number. Reports will automatically be sent to the secondary Central Station phone number if attempts to transmit to the primary Central Station phone number are unsuccessful. If 10 total attempts to communicate are unsuccessful, a Communicator Failure report will be displayed.

The ES-50X meets NFPA 72 National Fire Code reporting requirements for: (a) the type of signal, (b) condition and (c) location of the reporting premises. The general priority reporting structure is:

1. Zone Alarms and Restores
2. Zone Troubles and Restores
3. System Troubles and Restores
4. 24-hour Test

The minimum wire gauge allowed is 26 AWG.

5.1 Transmittal Priorities

The integral communicator transmits highest priority events first. Events, in terms of priority, are listed below in descending order:

1. Alarms (highest priority level)
   - Pull stations
   - Waterflow
   - Smoke detector
   - Other fire alarm types
   - CO alarm
2. Supervisory Zone
3. System Troubles
   - Zone disabled
   - Fire drill
   - AC fail (after delay)
   - Zonal faults
   - Earth fault
   - Low battery
   - Telephone line fault
   - Notification Appliance Circuits fault
   - Communication trouble
   - Annunciator trouble
   - System off normal
4. Restoral Reports
   - Zone alarm
   - Supervisory
   - Zone(s) enabled
   - Fire drill
   - AC
   - Zone fault
   - Earth
   - Battery
   - Telephone line
   - Notification Appliance Circuits
   - Communication
   - Annunciator trouble
   - System off normal
5. 24 Hour Test (lowest priority)
Red LEDs are provided on the circuit board to identify which telephone line is activated. Also, a green LED labeled Kissoff will turn on whenever the control panel has successfully transmitted reports to the Central Station. The Kissoff LED may turn on several times during communications with a Central Station.

The table below shows UL listed receivers which are compatible with the ES-50X.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SIA-DCS-8</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SIA-DCS-20</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ademco Contact ID</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.1 Compatible UL Listed Receivers

1. With 685-8 Line Card with Rev. 4.4d software
3. With version V2.4 Receiver and 126047 Line Card Rev. G
4. With 124077V2.00 Receiver and 126047 Line Card Rev. M
5. With V7301 Receiver S/W
6. With 01.01.03 Receiver S/W and Line Card 01.01.03
7. With software V1.86
8. With software V1.72
9. With DSP4016 and V1.6 Line Card
10. With software V3.9

IMPORTANT! It is the installer’s responsibility to ensure that the Digital Alarm Communicator/Transmitter is compatible with the Central Station Receiver, utilized by the monitoring service, prior to installation. The Compatibility Table provides a list of compatible receivers and associated software versions for the receivers. Changes in the hardware and/or software by the receiver manufacturers may affect the receiver compatibility with the FACP DACT. After completing the installation, communication between the DACT and Central Station Receiver must be tested and verified.
Section 6: FS-Tools Upload/Download

**Important!** The FACP will automatically reset 2 minutes after completion of a user program download via the FS-Tools programming utility. To prevent program corruption, the operator must wait until this panel reset occurs before performing any panel operations.

The control panel may be programmed or interrogated off-site via an Ethernet connection or locally using a USB cable. Any personal computer with Windows® XP or newer, 32 or 64 bit, and Upload/Download software FS-Tools, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status, system voltages, time and date.

The control panel may also communicate to a local PC at the job-site. The PC must be connected to the USB connector J20 on the FACP main circuit board. A standard USB cable with male-A to male-A connectors, which must be purchased separately, is required.

**Important:** Remote modification of FACP programming requires that the panel be enabled for remote download (refer to 6.1, "FS-Tools Up/Download" below). Remote interrogation of panel programming, history logs, detector status, etc., is possible without enabling the remote download option.

**CAUTION:** After successfully downloading a program, make certain to perform the following steps:
1. Print out all programmed data via Print Mode or manually view programmed entries and compare to intended program data
2. Test all affected panel operations
3. Immediately correct any problems found

### 6.1 FS-Tools Up/Download

NFPA 72 requirements state that a technician be on-site and at the control panel whenever the FS-Tools Programming Utility is used to download any information to the FACP. This applies to local and remote programming. For this reason, a new option has been added to the FACP which allows an individual at the FACP to enter a password and either enable the proprietary mode where downloading will be allowed at any time or access a specific password protected screen where downloading will be allowed regardless of the current proprietary setting. The FS-Tools Download option can be selected from the main menu screen as shown below:

```
Pressing 3 for FS-Tools Download while viewing the main menu will cause the following screen to be displayed:
```

![FS-TOOLS DOWNLOAD](image)

The FS-Tools Download password (default 22222222) must be entered to access the FS-Tools Download feature. Note that the default password can be changed using the Password Change option (refer to “Password Change” on page 96). Entering the correct password will cause the following screen to be displayed:

```
Pressing 1 for Proprietary No (factory default setting), while viewing the FS-Tools Download screen, will cause the display to toggle from Proprietary No to Proprietary Yes. Each press of the 1 key will cause the display to toggle between Proprietary No and Proprietary Yes. Selecting Proprietary Yes will program the FACP to allow remote programming downloads from the FS-Tools programming utility at all times without the need to access the FS-Tools Download screen. Refer to the table on page 47 for permissible settings.
```

```
Pressing 2 for Accept Download will cause the following screen to be displayed:
```

![FS-TOOLS DOWNLOAD ACCEPT](image)

While this screen is displayed, remote programming downloads are allowed regardless of the Proprietary setting. Exiting this screen will disable any further downloads to the FACP. Also, following 30 minutes of inactivity (including up/downloading), the Accept Download screen will time-out, causing the display to return to the System Normal screen.

### 6.2 Transferring a Program

The first time that the control panel is downloaded (whether initiated at the jobsite or remotely), a secret code is loaded in by a Service Terminal. Future upload or download requests cause verification of the secret code by the control panel before processing of data is allowed. If the secret code is not verified, the control panel will terminate the request.

While the control panel is communicating with the Service Terminal, one of the DACT’s red phone line active LEDs will turn on steady. In order to download the panel (whether initiated at the jobsite or remotely), the following must be true:

- The control panel must be in the Normal Mode of operation. Downloading is not possible if the panel is in any other mode.
There cannot be any active communications ongoing with a Central Station receiver.
All active events must be successfully 'kissed-off' by the Central Station(s). The communicator must be in a standby state with no new information waiting to be transmitted to a Central Station.

### 6.2.1 Security Features

Upload and download with the control panel have been carefully designed to include key security features to ensure proper functionality. Any time a transfer is initiated, the control panel and the Service Terminal will communicate and transfer data before contacting a Central Station. When the data transfers are completed and the control panel disconnects from the Service Terminal, the control panel will call the Central Station and report one of the following conditions:

- Upload/Download request received
- Upload and/or Download request successful
- Upload/Download failed

The key features are listed and explained in the following sections.

#### Secret Code Verification

A secret code is stored in the control panel by a Service Terminal to prevent unauthorized access. The secret code is created at the Service Terminal by the master user and cannot be viewed or changed by anyone other than a master user. Viewing of the secret code is prohibited at the control panel. Prior to allowing an upload or download of data, the control panel will verify the secret code transmitted by the Service Terminal.

#### Time-out at Control Panel

Upon answering an incoming call on the primary Central Station phone line, the control panel will listen for a modem connection signal. If this signal is not received within 50 seconds, the control panel will disconnect the call. Upon successful connection (secret code verified), if no communication occurs within 30 minutes, the panel will disconnect the call. Upon time-out, transfer activity will be reported to the Central Station (if enabled) and the connection will be terminated.

#### Error Checking

As each block of data is received by the control panel, it is checked for accuracy. If an error is detected, the block is retransmitted until correct, up to a maximum of four times. If the Secret Code is not verified and four errors occur, the call is disconnected and the report that the upload/download was not successful is called to the Central Station(s).

#### Central Station Data Protection

The primary and secondary Central Station phone numbers, communications format, account code, test time and programmable event codes are vital Central Station information. These blocks of data are protected from partial programming due to faulty phone connections, line noise and other errors. This prevents the panel from being confused due to a wrong phone number, account code, test time and most critical formatting errors.
Section 7: USB Upload/Download

**Important!** The FACP will automatically reset 2 minutes after completion of a user program download. To prevent program corruption, the operator must wait until this panel reset occurs before performing any panel operations.

**CAUTION:** After successfully downloading a program, make certain to perform the following steps:
1. Print out all programmed data via Print Mode or manually view programmed entries and compare to intended program data
2. Test all affected panel operations
3. Immediately correct any problems found

### 7.1 USB Upload/Download

NFPA 72 requirements state that a technician be on-site and at the control panel whenever the FS-Tools Programming Utility is used to download any information to the FACP. This applies to local and remote programming. For this reason, a new option has been added to the FACP which allows an individual at the FACP to enter a password and either enable the proprietary mode where downloading will be allowed at any time or access a specific password protected screen where downloading will be allowed regardless of the current proprietary setting.

The USB upload/download option allows for the transfer of programming information via a flash drive. The USB thumb drive must be in FAT32 file system format. This is typically the default format. Insert a USB flash drive into J20 on the bottom edge of the fire panel’s circuit board. The USB Download option can be selected from the main menu screen as shown below:

| 1=READ STATUS MODE | 2=PROGRAMMING MODE | 3=FSTOOL UP/DOWNLOAD | 4=USB UP/DOWNLOAD |

Pressing 4 for USB Up/Download while viewing the main menu will cause the following screen to be displayed:

**USB UP/DOWNLOAD**

ENTER PASSWORD

*********

The USB Upload/Download password (default 22222222) must be entered to access the USB Upload/Download feature. Note that the default password can be changed using the Password Change option (refer to “Password Change” on page 96). Entering the correct password will cause the following screen to be displayed:

**USB UP/DOWNLOAD**

1=UPLOAD PROGRAM
2=DOWNLOAD PROGRAM

Pressing 1 for Upload Program, while viewing the USB Up/Download screen, will display the following.

**UPLOAD TO USB**

FILENAME:

Using the keypad and arrow keys, enter a name for the current FACP configuration to save to the USB drive, and then press Enter.

The following screen will be displayed while the program is sent to the USB drive:

**USB UP/DOWNLOAD**

SYSTEM CONFIGURATION TRANSFER IN PROCESS PLEASE WAIT

An error message will display if there is no USB drive inserted in the FACP or if there is an existing configuration saved on the drive with the same file name.

While this screen is displayed, USB programming uploads are allowed. Exiting this screen will disable any further uploads to a flash drive. Also, following 30 minutes of inactivity (including up/downloading), the Accept Upload screen will time-out, causing the display to return to the System Normal screen.

Similarly, the following screen will display when 2 for Download Program is pressed.

**DOWNLOAD FROM USB**

FILE: FS_50.cfg
1=NO
2=YES
Pressing 2 for Yes will cause the following screen to be displayed:

![USB Up/Download System Configuration Transfer In Process Please Wait]

An error message will display if there is no USB drive inserted in the FACP or if there is no existing configuration saved on the USB drive.

While this screen is displayed, local programming downloads are allowed. Exiting this screen will disable any further downloads to a flash drive. Also, following 30 minutes of inactivity (including up/downloading), the Accept Download screen will time-out, causing the display to return to the System Normal screen.

**Important!**

The program database created by the FS-Tools programming utility will be called, “FS_50.cfg” on the USB flash drive. Before loading the new database into the fire panel, the existing database will be saved as file, “FS_50.bak” on the USB flash drive. Only one new and one saved database can reside on the USB flash drive.
Section 8: Firmware Upgrade

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product from www.firelite.com prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

8.1 Firmware Upgrade

The Firmware Upgrade option can be selected from the main menu screen as shown below:

| 1=READ STATUS MODE | 1=FIRMWARE UPGRADE |
| 2=PROGRAMMING MODE | |
| 3=FSTOOL UP/DOWNLOAD | |
| 4=USB UP/DOWNLOAD | |

Panel Programming Screen #1

Panel Programming Screen #2

Pressing 1 for Firmware Upgrade while viewing Main Menu Screen #2 will cause the following screen to be displayed:

FIRMWARE UPGRADE
ENTER PASSWORD
********

The Firmware Upgrade password (default 00000000) must be entered to access the Firmware Upgrade feature. Note that the default password can be changed using the Password Change option (refer to “Password Change” on page 96). Entering the correct password will cause the following screen to be displayed:

FIRMWARE UPGRADE
1=MAIN PANEL
2=SLC LOOP CARD
3=COMMUNICATOR

Pressing 1 for Main Panel will upgrade the software on the FACP. Pressing 2 for SLC Loop Card will update the firmware on the SLC Communication Loop Card. Pressing 3 will update the software for the IPOTS-COM Communicator (pre-installed). Pressing any option will cause the following screen to be displayed:

DO YOU WANT TO BACKUP PROGRAMMING?
1=NO
2=YES

Before upgrading any software, the panel will give the option to save current programming to a flash drive. Press 1 for No to bypass programming backup or press 2 for Yes to save a copy of the current programming to the flash drive. The USB thumb drive must be in FAT32 file system format. This is typically the default format. An error message will display if there is not enough free memory space on the flash drive, if a backup was selected.

Insert the flash drive with the hardware upgrade downloaded from www.firelite.com into the USB port J20 on the bottom edge of the main panel circuit board. After the backup option screen, the following is an example of the main panel upgrade:

MAIN PANEL UPGRADE
FILE: XXXXXX
ARE YOU SURE?
1=NO
2=YES

Press 1 for No to cancel or 2 for Yes to continue with the panel upgrade. The following screen will display if Yes is selected.

FIRMWARE UPGRADE
IN PROGRESS
PLEASE WAIT

If the following error message displays, ensure the flash drive is inserted at J20 and it is fully seated.

MAIN PANEL UPGRADE
USB DRIVE NOT FOUND

The following error message will display if the upgrade file is not found on the flash drive. Ensure the file is present and it is a valid file for the type of hardware being updated.

MAIN PANEL UPGRADE
FILE NOT FOUND
Notes
Section 9: Power Supply Calculations

9.1 Overview

This section contains instructions and tables for calculating power supply currents in alarm and standby conditions. This is a four-step process, consisting of the following:

1. Calculating the total amount of AC branch circuit current required to operate the system.
2. Calculating the worst-case system current load on the control panel, when primary (AC) power is applied, to ensure that the limit of the its internal power supply will not be exceeded. This considers the fire alarm condition only.
3. Calculating the total current load on the batteries (secondary power source) in the event of an AC power loss. This considers both standby and fire alarm conditions.
4. Calculating the size of the batteries required to support the system if AC power loss occurs, based on the total battery current load, plus a regulatory agency mandated derating factor.

9.2 Calculating the AC Branch Circuit

The control panel requires connection to a separate, dedicated AC branch circuit, which must be labeled FIRE ALARM. This branch circuit must connect to the line side of the main power feed of the protected premises. No other non-fire alarm equipment may be powered from the fire alarm branch circuit. The branch circuit wire must run continuously, without any disconnect devices, from the power source to the control panel. Overcurrent protection for this circuit must comply with Article 760 of the National Electrical Codes as well as local codes. Use 14 AWG (2.00 mm²) wire with 600 volt insulation for this branch circuit.

Use Table 9.1, to determine the total amount of current, in AC amperes (A), that must be supplied to the system.

9.3 Calculating the System Current Load

9.3.1 Overview

The control panel’s internal power supply must support all connected devices while primary (AC) power is applied. The continuous system current load is highest during a fire alarm condition. To calculate the fire alarm load on the internal power supply, use Calculation Column 1 in Table 9.3 on page 127.

The secondary power source (batteries) must be able to power the system under both standby and fire alarm conditions upon loss of primary (AC) power. To calculate the fire alarm load on the secondary power source, use Calculation Column 2 in Table 9.3 on page 127. To calculate the standby load on the secondary power source, use Calculation Column 3 in Table 9.3 on page 127.

All currents are given in amperes (A). Table 9.2 shows how to convert milliamperes and microamperes to full amperes.

9.3.2 How to Calculate System Current Load

Use Table 9.3 on page 127 to calculate current load as follows:

1. Enter the quantity of devices in all three columns.
2. Enter the current draw where required. Refer to the Device Compatibility Document and SWIFT Manual for compatible devices and their current draw.
3. Calculate the current draws for each in all columns.
4. Sum the currents for each column. This is the total load.
5. Verify that the total from Column 1 is less than or equal to the value specified in the note.
6. Copy the totals from Column 2 and Column 3 to Table 9.4 on page 128.

Table 9.3 contains columns for calculating current load. For each column, calculate the current and enter the total (in amperes) in the bottom row. When finished, copy the totals from Calculation Column 2 and Calculation Column 3 to Table 9.4 on page 128. For maximum output current available per circuit and per panel, refer to Section 1.2, “Specifications”, on page 13.
## Calculating the System Current Load

### Power Supply Calculations

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Calculation Column 1</th>
<th>Calculation Column 2</th>
<th>Calculation Column 3</th>
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<tbody>
<tr>
<td></td>
<td>Primary (AC) Power Source</td>
<td>Secondary (Battery) Power Source</td>
<td>Standby Current (amps)</td>
</tr>
<tr>
<td></td>
<td>Fire Alarm Current (amps)</td>
<td>Fire Alarm Current (amps)</td>
<td>Fire Alarm Current (amps)</td>
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<tr>
<td></td>
<td>Qty</td>
<td>X[current draw]= Total</td>
<td>Qty</td>
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<tr>
<td>Main Circuit Board¹</td>
<td>1</td>
<td>X[0.257]=</td>
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<td>IPOTS-COM Communicator</td>
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<td>X[0.041]=</td>
<td>[ ]</td>
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<td>CELL-MOD/CAB-FL</td>
<td>[ ]</td>
<td>X[0.100]=</td>
<td>[ ]</td>
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<tr>
<td>ANN-80</td>
<td>[ ]</td>
<td>X[0.040]=</td>
<td>[ ]</td>
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<td>ANN-100</td>
<td>[ ]</td>
<td>X[0.025]=</td>
<td>[ ]</td>
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<td>ANN-(R)/LED</td>
<td>[ ]</td>
<td>X[0.068]=</td>
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<td>Power Supervision Relays⁴</td>
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<tr>
<td>CP350 &amp; CP355</td>
<td>[ ]</td>
<td>X[0.00030]=</td>
<td>[ ]</td>
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<td>SD350, SD355, SD365</td>
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<td>[ ]</td>
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<td>[ ]</td>
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<td>[ ]</td>
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<tr>
<td>H350, H355, H365</td>
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<td>X[0.00030]=</td>
<td>[ ]</td>
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<tr>
<td>H350R, H355R, H365R</td>
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<td>X[0.00030]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>H355HT, H365HT</td>
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<td>[ ]</td>
</tr>
<tr>
<td>D350P &amp; D350PL</td>
<td>[ ]</td>
<td>X[0.00030]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>D350RP &amp; D350RPL</td>
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<td>[ ]</td>
</tr>
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<td>B501BH &amp; B501BHT⁵</td>
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<td>[ ]</td>
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<td>B224RB</td>
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<td>[ ]</td>
</tr>
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<td>B224BI</td>
<td>[ ]</td>
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<td>[ ]</td>
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</tr>
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<td>[ ]</td>
<td>X[0.00030]=</td>
<td>[ ]</td>
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<td>[ ]</td>
<td>X[0.000375]=</td>
<td>[ ]</td>
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<td>MMF-302</td>
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<td>MG-12LX</td>
<td>[ ]</td>
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<td>[ ]</td>
</tr>
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<td>CMF-300</td>
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<td>X[0.00030]=</td>
<td>[ ]</td>
</tr>
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</tr>
<tr>
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<td>[ ]</td>
<td>X[0.000225]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>CRF-300-6</td>
<td>[ ]</td>
<td>X[0.00027]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>i300</td>
<td>[ ]</td>
<td>X[0.00045]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>ISO-6</td>
<td>[ ]</td>
<td>X[0.00045]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>W-GATE</td>
<td>[ ]</td>
<td>X[0.00045]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>NAC #1'</td>
<td>[ ]</td>
<td>X[ ]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>NAC #2'</td>
<td>[ ]</td>
<td>X[ ]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>FCPS (remote sync)</td>
<td>[ ]</td>
<td>X[0.02]=</td>
<td>[ ]</td>
</tr>
<tr>
<td>Current Draw from TB3</td>
<td>[ ]</td>
<td>[ ]=</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

**Table 9.3 System Current Load Calculations**

1. Main board with display only.
2. If using the Reverse Polarity Alarm output, add 0.005 amps; if using the Reverse Polarity Trouble output, add another 0.005 amps.
3. Refer to the Device Compatibility Document for standby current.
4. Must use compatible listed Power Supervision Relay.
5. Maximum alarm current for each sounder base is 0.015 amps which must be supplied by aux. 24VDC source.
6. When powered by an external source, use 0.040A. When powered by the SLC, use 0.024A.
7. If using Gentex brand NACs, the max number of devices for each NAC output is 35. The “UL Max” current rating, published in their data sheets, must be used in order to maintain performance under low battery conditions with the maximum wire resistances shown in Table D.2 on page 141.
8. Total Alarm current load cannot exceed 3.0 amps.
9. When AC power is initially applied to the panel and the battery is not fully charged, an initial charge current of up to 5.3 amps may be observed at the battery. This high current is only applied for a very short duration (milliseconds) and does not affect system load or battery size calculations.
10. Total Standby current load cannot exceed 2.25 amps.
9.4 Calculating the Battery Size

Use Table 9.4 to calculate the total Standby and Alarm load in ampere hours (AH). This total load determines the battery size (in AH), required to support the system upon loss of primary (AC) power. Complete Table 9.4 as follows:

1. Enter the totals from Table 9.3 on page 127, Calculation Columns 2 and 3 where shown
2. Enter the NFPA Standby and Alarm times (refer to ‘NFPA Requirements’ below)
3. Calculate the ampere hours for Standby and Alarm, then sum the Standby and Alarm ampere hours
4. Multiply the sum by the derating factor of 1.2 to calculate the proper battery size (in AH)
5. Write the ampere hour requirements on the Protected Premises label located inside the cabinet door

<table>
<thead>
<tr>
<th>Total Standby Load, Battery Powered (from Table 9.3 Calculation Column 3)</th>
<th>Required Standby Time (24 hours)</th>
<th>= AH</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>X[ ]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Fire Alarm Load, Battery Powered (from Table 9.3 Calculation Column 2)</th>
<th>Required Alarm Time (for 5 min., enter 0.084, for 10 min., enter 0.168)</th>
<th>= AH</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>X[ ]</td>
<td></td>
</tr>
</tbody>
</table>

Sum of Standby and Alarm Ampere Hours = AH

Multiply by the Derating Factor X 1.2

Battery Size, Total Ampere Hours Required = AH

Table 9.4 Total Secondary Power Requirements at 24 VDC

9.4.1 NFPA Battery Requirements

NFPA 72 Local, Proprietary, Central, Auxiliary and Remote Fire Alarm Systems require 24 hours of standby power followed by 5 minutes in alarm.

9.4.2 Selecting and Locating Batteries

Select sealed lead acid batteries that meet or exceed the total ampere hours calculated in Table 9.4. The control panel can charge batteries in the 7 AH to 18 AH range. The control panel cabinet is capable of housing batteries up to 18 AH. Batteries larger than 18 AH require a UL listed external battery charger and cabinet such as the BB-26, BB-55F or other UL listed external battery cabinet.
Appendix A: Software Zones

A.1 Correlations

Setup and configuration of an addressable system is different than a conventional system. In a conventional system, assignment of input devices (smoke detectors, pull stations, heat detectors, etc.) to zones is accomplished through wiring. The wiring is direct from clearly marked panel terminals to any device assigned to a particular zone. Connection of output devices (horns, bells, strobes, etc.) in a conventional system is accomplished by direct wiring of the output devices to Notification Appliance Circuit terminals.

In an addressable system, a minimum of a single pair of wires (SLC communication loop) is used to connect all addressable input and output devices. Communications between the FACP (Fire Alarm Control Panel) and all addressable devices takes place over the wire pair which originates from the FACP. Software programming is used to configure the system as opposed to direct wiring. Zone assignments are created via software means, hence the term software zones.

Setup of an ES-50X software zone is accomplished by panel programming. Each addressable device can be assigned to a maximum of five software zones. Each software zone, however, may have from 1 to 50 addressable input and output devices assigned to it.

Monitor modules, control modules and detectors comprise a group of 50 addresses, each device having a unique address from 1 to 50. Be careful not to duplicate addresses between devices. Refer to the following page for an example of zoning.

In the example on the following page:

- Zone 01 has the following addressable devices assigned to it:
  - ✔ smoke detectors with addresses 01 and 02
  - ✔ monitor module with address 03
  - ✔ monitor module with address 04 and 05
  - ✔ control modules with addresses 06, 07, 10, 11, and 13
- Zone 02 has the following addressable devices assigned to it:
  - ✔ monitor module with addresses 04 and 05
  - ✔ smoke detectors with addresses 15 and 16
  - ✔ control modules with addresses 20, 11, and 21
- Zone 03 has the following addressable devices assigned to it:
  - ✔ smoke detectors with addresses 22, 24, and 25
  - ✔ control module with address 30
  - ✔ control modules with addresses 11, 31, and 32

The example points out some of the key assignment features of the ES-50X. Addresses of detectors, monitor modules and control modules are not duplicated. The control module with address 11 is assigned to three software zones (providing floor above and floor below). Be careful to properly plan the installation prior to installing any devices.
Correlation of Input and Output Zones

The zone correlations which are shown graphically above are also presented in Table A.1 on page 131.
### ADDRESSABLE DEVICE ZONE ASSIGNMENT

<table>
<thead>
<tr>
<th>Address</th>
<th>Device Type</th>
<th>Zone Number</th>
<th>ADJ/NOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>smoke detector</td>
<td>1</td>
<td>FIRST HALL</td>
</tr>
<tr>
<td>02</td>
<td>smoke detector</td>
<td>1</td>
<td>ELEV. LOBBY</td>
</tr>
<tr>
<td>03</td>
<td>monitor module</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>monitor module</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>05</td>
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<td>06</td>
<td>control module</td>
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Table A.1 Detector Programming Sheet Example
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<th>Device Type</th>
<th>Zone Number</th>
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Table A.2 Blank Programming Sheet
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Table A.3 Blank Programming Sheet
Appendix B: Default Programming

The following table provides a list of the programming options and their factory default settings.

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<th>Program Option</th>
<th>Factory Default</th>
<th>Program Option</th>
<th>Factory Default</th>
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<td>Detector Programming</td>
<td>Not Installed</td>
<td>Waterflow Silenceable</td>
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<td>Smoke-Photo</td>
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<td>Relay 2</td>
<td>Trouble (fixed)</td>
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<td>Supervisory</td>
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Notes
Appendix C: NFPA Standard-Specific Requirements

The ES-50X has been designed for use in commercial, industrial, and institutional applications and meets the requirements for service under the National Fire Protection Association (NFPA) Standards outlined in this Appendix. The minimum system components required for compliance with the appropriate NFPA standard are listed below:

**ES-50X Control Panel**

Contains the main control board, cabinet (backbox and door), main power supply transformer and power supply.

**Batteries**

Refer to “Power Supply Calculations” on page 126, for Standby Power Requirements.

**Initiating Devices**

Connected to one of the control panel's Initiating Device Circuits.

**Notification Appliances**

Connected to the control panel's Notification Appliance Circuits via a control module.

The following additional equipment is needed for compliance with the NFPA 72 standards listed below:

**NFPA 72 NATIONAL FIRE ALARM STANDARDS FOR:**

**NFPA 72 Central Station Service (Protected Premises Unit) or Remote Station Service**

Onboard Digital Alarm Communicator Transmitter for connection to a compatible listed Central Station DACR or Protected Premises Receiving Unit. This unit must be installed as outlined in “Components” on page 15.

OR

4XTMF Transmitter Module for connection to the RS82 Remote Station Receiver. See Figure C.2, “Remote Station Connection Using 4XTMF Module,” on page 137, for installation instructions for this unit.

**NFPA 72 Auxiliary Fire Alarm System**

4XTMF Transmitter Module for connection to a compatible listed Local Energy Municipal Box. This unit must be installed as illustrated in the section titled “4XTMF Transmitter Module Installation” on page 30 and as outlined in Figure C.1, “Municipal Box Connected to 4XTMF Transmitter Module” on page 136.

**NFPA 72 Proprietary Fire Alarm System**

ES-50X Alarm, Trouble and Supervisory contacts connected to Transmitter(s). See Figure C.3, “Proprietary Protective Signaling System,” on page 138, for installation instructions for this unit.

**NFPA 72 Auxiliary Fire Alarm System**

All connections are power-limited and supervised. This application is not suitable for separate transmission of sprinkler supervisory or trouble conditions.

Notes:

1. 3 ohms maximum loop resistance allowed for wiring from control panel to Municipal Box.
4. Refer to “4XTMF Transmitter Module Installation” on page 30 for detailed information.
NFPA 72 Remote Station Protective Signaling System

Notes:
2. Refer to “4XTMF Transmitter Module Installation” on page 30 for detailed information.

RS82 Remote Station Receiver UL listed.
Refer to Instruction Manual for Remote Station Receiver Model RS82.

Polarity Shown is Normal Standby

Power-limited

(Dummy load with a 4.7KΩ ¼ watt resistor when no connection is made)

4XTMF Transmitter Module

Figure C.2 Remote Station Connection Using 4XTMF Module
NFPA 72 Proprietary Protective Signaling Systems

ES-50X Addressable Fire Control Panel

ES-50X Main Board

Form-C Alarm contact programmed to activate on General Alarm.

Form-C Trouble contact which will automatically activate on any Trouble condition.

Form-C relay contact programmed to activate on Supervisory condition.

Notes:
1. Connection between the ES-50X and the transmitter are supervised by the transmitter.
2. This ES-50X/Transmitter arrangement can be employed for NFPA 72 Proprietary Protective Signaling System.
3. Potter Electric Model EFT-C has not been tested for UL 864 9th Edition and is for use in retrofit applications only.

Figure C.3 Proprietary Protective Signaling System
C.1 MBT-1 Municipal Box Trip - Silenceable

The following figure illustrates the connection of the MBT-1 (Municipal Box Trip) between the FACP and a Local Energy Municipal Box. The use of an addressable control module programmed for General Alarm and Silenceable allows silencing of the Municipal Box without resetting the panel or box.

The addressable Control Module must be programmed as Silenceable and General Alarm.

*If the SLC device does not match the one in this figure, refer to the SLC manual wiring conversion charts for legacy and newer versions of the modules.

Figure C.4 MBT-1 Silenceable
Appendix D: Wire Requirements

T-tapping of the SLC loop wiring is allowed for 2-wire (Class B) configurations. The total resistance of any branch cannot exceed 40 ohms. The total wire length of all branches cannot exceed 10,000 feet (3,000 m).

Connecting external system accessories to the ES-50X main circuits must be carefully considered to ensure proper operation. It is important to use the correct type of wire, gauge and run length for each ES-50X circuit. Reference the chart below to specify wire requirements and limitations for each ES-50X circuit.

Note:
1. If the SLC loop is to be run in conduit with Notification Appliance Circuits, the risk of encountering problems can be greatly reduced by exclusively employing electronic sounders instead of more electronically noisy notification appliances such as electromechanical bells or horns.
2. The SLC can be programmed to operate in LiteSpeed mode (factory default setting) for a quicker device response time. While shielded wire is not required in LiteSpeed mode, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Use the following table to determine the specific wiring requirements for the SLC when unshielded wire is used:

Refer to Table D.1 on page 140 and Table D.2 on page 141 for wiring requirements.

<table>
<thead>
<tr>
<th>CIRCUIT CONNECTIONS</th>
<th>WIRE REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circuit Type</td>
<td>Wire Type and Limitations</td>
</tr>
<tr>
<td>SLC loop (power-limited)</td>
<td>Connects to Addressable Devices</td>
</tr>
<tr>
<td>LITESPEED MODE</td>
<td>Twisted, unshielded pair 40 ohms maximum per length of Class A loops. 40 ohms per branch maximum for Class B loops</td>
</tr>
<tr>
<td>ANN-BUS (EIA-485) (power-limited)</td>
<td>Connects to annunciator modules/</td>
</tr>
<tr>
<td>monitor module (power-limited)</td>
<td>Initiating Device Circuit: Contact Closure</td>
</tr>
<tr>
<td>monitor module (power-limited)</td>
<td>Initiating Device Circuit: Two-wire Modules</td>
</tr>
<tr>
<td>control module (power-limited)</td>
<td>Notification Appliance Circuit</td>
</tr>
<tr>
<td>Remote Sync Output</td>
<td>Provides strobe and normal sync for remote NAC power supplies</td>
</tr>
</tbody>
</table>

Table D.1 FACP Wire Specifications

1 When using untwisted, unshielded wire, full conduit is recommended for optimum EMI/RFI protection.
D.1 NAC Wiring

The following table lists NAC wiring requirements for the FACP.

<table>
<thead>
<tr>
<th>NAC Load (Amps)</th>
<th>Max. allowable total loop resistance (ohms)</th>
<th>CLASS-B</th>
<th>Max. allowable wire pair length (feet)</th>
<th>CLASS-A</th>
<th>Max. allowable wire pair length (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AWG 12</td>
<td>AWG 14</td>
<td>AWG 16</td>
<td>AWG 18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>solid</td>
<td>solid</td>
<td>solid</td>
<td>solid</td>
</tr>
<tr>
<td>0.25</td>
<td></td>
<td>14.40</td>
<td>4450</td>
<td>2797</td>
<td>1756</td>
</tr>
<tr>
<td>0.5</td>
<td></td>
<td>7.20</td>
<td>2225</td>
<td>1399</td>
<td>878</td>
</tr>
<tr>
<td>0.75</td>
<td></td>
<td>4.80</td>
<td>1483</td>
<td>932</td>
<td>585</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>3.60</td>
<td>1112</td>
<td>699</td>
<td>439</td>
</tr>
<tr>
<td>1.25</td>
<td></td>
<td>2.88</td>
<td>890</td>
<td>559</td>
<td>351</td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td>2.40</td>
<td>742</td>
<td>466</td>
<td>293</td>
</tr>
<tr>
<td>1.75</td>
<td></td>
<td>2.06</td>
<td>636</td>
<td>400</td>
<td>251</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1.80</td>
<td>556</td>
<td>350</td>
<td>220</td>
</tr>
<tr>
<td>2.25</td>
<td></td>
<td>1.60</td>
<td>494</td>
<td>311</td>
<td>195</td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td>1.44</td>
<td>445</td>
<td>280</td>
<td>176</td>
</tr>
</tbody>
</table>

Table D.2 NAC Wiring Requirements for FACP

Notes:
2. These distances reflect the worst case scenario and are based on the current draw of the highest candela strobes at the low end of the supported NAC voltage with the entire load at the end of the circuit. Further distances can be achieved by performing a point-to-point voltage calculation that more accurately reflects the specific devices used and how they are dispersed on the circuit.
3. If using Gentex brand notification appliances, the “UL Max” current rating published in their data sheets, must be used in order to maintain performance under low battery conditions with the maximum wire resistances shown in the table above.
Appendix E: HVAC Control

The FACP can be programmed to shut down a building’s HVAC fans in the event of a fire. The fans cannot be restarted until the fire alarm condition has been cleared and the FACP has been reset to a normal (non-alarm) condition.

**IMPORTANT!** This HVAC feature is *not* to be used for smoke control. It is only designed to shut down fans during an alarm condition.

E.1 Control Module Operation

E.1.1 HVAC SHUTDOWN

The HVAC SHUTDOWN type code can be assigned to any addressable control relay module for the purpose of shutting down HVAC fans during a fire alarm, duct supervisory, photo supervisory, CO alarm, or CO supervisory condition. Devices connected to a module with this type code are unsupervised. To program this feature in the FACP:

- Program the **HVAC SHUTDN** type code to the control module which will be used to shut down the fans (refer to *Type* under the section titled, “Edit Module Screen for Control Modules” on page 63).
- Program the control module to a software zone and program fire alarm, duct supervisory, photo supervisory, CO alarm, or CO supervisory input devices which, when activated, are to cause fan shutdown to the same software zone (refer to *Zone Assignment* under the section titled, “Edit Module Screen for Control Modules” on page 63).
- If using a relay control module for HVAC shutdown, monitor the state of the control module using an addressable monitor module programmed for **Trouble Monitor**. (Refer to *Type Monitor* under section titled, “Edit Module Screen for Monitor Module” on page 58). The monitor module’s display label must be programmed to display HVAC SHUTDOWN. When a shutdown event occurs, the control module will both shut down the fans and activate the monitor module. When the control module is active, the monitor module will indicate a trouble condition at the FACP along with the label HVAC SHUTDOWN.

![Figure E.1 HVAC RLY Shutdown](image1)

- If using a NAC control module for HVAC shutdown, monitor the state of the control module using an addressable monitor module programmed for Trouble Monitor and an MR Series relay (MR-101CR). (Refer to *Type Monitor* under the section titled, “Edit Module Screen for Monitor Module” on page 58). The monitor module’s display label must be programmed to display HVAC SHUTDOWN. When a shutdown event occurs, the control module will activate the MR Series relay which, in turn, will both shut down the fans and activate the monitor module. When the control module and the MR series relay are active, the monitor module will indicate a trouble condition at the FACP along with the label HVAC SHUTDOWN. Note that the 24 VDC power used by the control module must be supervised using another addressable monitor module and an EOLR-1 power supervision relay.

![Figure E.2 HVAC NAC Shutdown](image2)

Once activated, the HVAC SHUTDOWN control module remains activated, even if the FACP is silenced or reset. After all the fire alarms, duct supervisories, photo supervisories, CO alarms, and CO supervisory conditions on the FACP have been cleared and the panel reset, the HVAC SHUTDOWN control module remains activated and the fans remain off. The fans can only be restarted when the HVAC SHUTDOWN control module is deactivated by the HVAC RESTART module.
E.2 Monitor Module Operation

E.2.1 HVAC RESTART

The HVAC RESTART type code can be assigned to any addressable monitor module for the purpose of resetting (deactivating) the HVAC SHUTDN control module and turning the fan back on. The HVAC RESTART monitor module acts globally throughout the FACP system and therefore, is not programmed to a particular zone. To program this feature in the FACP:

- Program the HVAC RESTART type code to a monitor module which will be used to deactivate the HVAC SHUTDN control module and restart the fans (refer to Type Monitor under the section titled, “Edit Module Screen for Monitor Module” on page 58).

The HVAC RESTART monitor module does not latch when activated. Pressing a switch connected to the monitor module will deactivate the HVAC SHUTDN control relay module only if there are no alarm conditions present. The HVAC SHUTDN control relay module can be deactivated if trouble conditions exist on the FACP.

E.2.2 HVAC OVRRIDE

The HVAC OVRRIDE type code can be assigned to any addressable monitor module for the purpose of overriding or preventing the HVAC SHUTDN control modules from activating. The HVAC OVRRIDE monitor module acts globally throughout the FACP system and therefore, is not programmed to a particular software zone. To program this feature in the FACP:

- Program the HVAC OVRRIDE type code to the monitor module which will be used to override the HVAC SHUTDN control module and prevent the fans from turning off (refer to Type Monitor under the section titled, “Edit Module Screen for Monitor Module” on page 58).

The HVAC OVRRIDE monitor module does not latch when activated. Activating a switch connected to the monitor module will override all HVAC SHUTDN control relay modules in the system, preventing the HVAC SHUTDN modules from activating and causing the FACP LCD to display an active HVAC OVRRIDE module and turn on the Supervisory LED. Releasing the switch will allow the HVAC SHUTDN control relay modules to activate with subsequent events, turning off the fans.

As an example, pressing the HVAC OVRRIDE switch with no fire alarms, duct supervisories, photo supervisories, CO alarms, or CO supervisories in the system will prevent the fans from being turned off when an alarm does occur. As long as the switch is activated, the fans will not shutdown for any alarms. If the system is still in alarm/supervisory condition when the switch is released, the fans will not shutdown unless another alarm/supervisory event occurs after the switch is released.

**Important:** If an alarm/supervisory event exists in the system and HVAC Shutdown has already occurred, HVAC OVRRIDE will have no effect on the HVAC SHUTDN control relay modules. HVAC OVRRIDE will prevent HVAC Shutdown from occurring only if it is initiated prior to an alarm/supervisory condition.

**NOTE:** Activation of the HVAC OVRRIDE module causes a supervisory event that will be communicated to the Central Station, if enabled.
Appendix F: Ademco Contact ID Format Event Code Descriptions

This appendix describes the various Event Codes and their messages which are available for the Ademco Contact ID Format.

F.1 Transmission Format Between DACT and Receiver

The transmission string for the Ademco Contact ID Format is as follows:

SSSS 18 QXYZ GG CCC

where

SSSS Four digit Subscriber ID Account Code
18 Identifies transmission as Contact ID to the receiver at the Central Station
Q Event Qualifier where 1 = New Event and 3 = New Restore
XYZ Event code
GG Group number
CCC Zone/Point number

Notes:
1. 18, which is used in the reporting structure to identify the transmission as Contact ID, is not printed out in the alarm and trouble report.
2. GG Group Number is fixed at '00'.
3. CCC for Zone or Point Number:
   ✓ Zone Number is transmitted as ‘01’ for zone 1 up to ‘49’ for zone 49
   ✓ Point Number is transmitted as ‘01’ for point/address 1 up to ‘50’ for point/address 50

F.2 Ademco Contact ID Typical Printout

A typical printout from a Central Station receiver (such as the Ademco 685) of alarm and trouble reports in the Ademco Contact ID Reporting Structure follows:

<table>
<thead>
<tr>
<th>Time</th>
<th>Date</th>
<th>Rcvr/Line ID</th>
<th>SSSS</th>
<th>QXYZ</th>
<th>GG</th>
<th>CCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>E110</td>
<td>00</td>
<td>C001</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>E111</td>
<td>00</td>
<td>C002</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>E380</td>
<td>00</td>
<td>C003</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>E570</td>
<td>00</td>
<td>C009</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>R110</td>
<td>00</td>
<td>C001</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>R111</td>
<td>00</td>
<td>C002</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>R380</td>
<td>00</td>
<td>C003</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>R570</td>
<td>00</td>
<td>C009</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>E158</td>
<td>00</td>
<td>C006</td>
</tr>
<tr>
<td>11:28</td>
<td>03/25</td>
<td>11</td>
<td>7777</td>
<td>E151</td>
<td>00</td>
<td>C007</td>
</tr>
</tbody>
</table>

Notes:
1. 11 is an example of a Receiver/Line Card, showing which receiver and line card the message was transmitted to.
2. Q, which is the Event Qualifier for the reporting structure, is printed out in the report as an E for New Event or R for New Restore.
### EVENT CODE CLASSIFICATIONS

#### Event Code Classifications

<table>
<thead>
<tr>
<th>Event Code</th>
<th>Event Type</th>
<th>Message Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Medical</td>
<td><strong>EMERG</strong> - Personal Emergency - #</td>
</tr>
<tr>
<td>101</td>
<td>Pendant Transmitter</td>
<td><strong>EMERG</strong> - Personal Emergency - #</td>
</tr>
<tr>
<td>102</td>
<td>Fail to report in</td>
<td><strong>EMERG</strong> - Fail to Check-in - #</td>
</tr>
<tr>
<td>110</td>
<td>Fire Alarm</td>
<td><strong>FIRE</strong> - Fire Alarm - #</td>
</tr>
<tr>
<td>111</td>
<td>Smoke</td>
<td><strong>FIRE</strong> - Smoke Detector - #</td>
</tr>
<tr>
<td>112</td>
<td>Combustion</td>
<td><strong>FIRE</strong> - Combustion - #</td>
</tr>
<tr>
<td>113</td>
<td>Waterflow</td>
<td><strong>FIRE</strong> - Waterflow - #</td>
</tr>
<tr>
<td>114</td>
<td>Heat</td>
<td><strong>FIRE</strong> - Heat Sensor - #</td>
</tr>
<tr>
<td>115</td>
<td>Pull Station</td>
<td><strong>FIRE</strong> - Pull Station - #</td>
</tr>
<tr>
<td>116</td>
<td>Duct</td>
<td><strong>FIRE</strong> - Duct Sensor - #</td>
</tr>
<tr>
<td>117</td>
<td>Flame</td>
<td><strong>FIRE</strong> - Flame Sensor - #</td>
</tr>
<tr>
<td>118</td>
<td>Near Alarm</td>
<td><strong>FIRE</strong> - Near Alarm - #</td>
</tr>
<tr>
<td>120</td>
<td>Panic Alarm</td>
<td><strong>PANIC</strong> - Panic - #</td>
</tr>
<tr>
<td>121</td>
<td>Duress</td>
<td><strong>PANIC</strong> - Duress - #</td>
</tr>
<tr>
<td>122</td>
<td>Silent</td>
<td><strong>PANIC</strong> - Silent Panic - #</td>
</tr>
<tr>
<td>123</td>
<td>Audible</td>
<td><strong>PANIC</strong> - Audible Panic - #</td>
</tr>
<tr>
<td>130</td>
<td>Burglary</td>
<td><strong>BURG</strong> - Burglary - #</td>
</tr>
<tr>
<td>131</td>
<td>Perimeter</td>
<td><strong>BURG</strong> - Perimeter - #</td>
</tr>
<tr>
<td>132</td>
<td>Interior</td>
<td><strong>BURG</strong> - Interior - #</td>
</tr>
<tr>
<td>133</td>
<td>24-Hour</td>
<td><strong>BURG</strong> - 24-Hour</td>
</tr>
<tr>
<td>134</td>
<td>Entry/Exit</td>
<td><strong>BURG</strong> - Entry/Exit - #</td>
</tr>
<tr>
<td>135</td>
<td>Day/Night</td>
<td><strong>BURG</strong> - Day/Night - #</td>
</tr>
<tr>
<td>136</td>
<td>Outdoor</td>
<td><strong>BURG</strong> - Outdoor - #</td>
</tr>
<tr>
<td>137</td>
<td>Tamper</td>
<td><strong>BURG</strong> - Tamper - #</td>
</tr>
<tr>
<td>140</td>
<td>General Alarm</td>
<td><strong>ALARM</strong> - General Alarm - #</td>
</tr>
<tr>
<td>141</td>
<td>Polling loop open</td>
<td><strong>ALARM</strong> - Polling Loop Open - #</td>
</tr>
<tr>
<td>142</td>
<td>Polling loop short</td>
<td><strong>ALARM</strong> - Polling Loop Short - #</td>
</tr>
<tr>
<td>143</td>
<td>Expansion module failure</td>
<td><strong>ALARM</strong> - Exp. Module Fail - #</td>
</tr>
<tr>
<td>144</td>
<td>Sensor tamper</td>
<td><strong>ALARM</strong> - Sensor Tamper - #</td>
</tr>
<tr>
<td>145</td>
<td>Expansion module tamper</td>
<td><strong>ALARM</strong> - Exp. Module Tamper - #</td>
</tr>
</tbody>
</table>
### Ademco Contact ID Format Event Code Descriptions

#### 24-Hour Non-Burglary - 150 and 160

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 24-Hour Non-Burg</td>
<td>ALARM - 24-Hr. Non-Burg - #</td>
</tr>
<tr>
<td>151 Gas detected</td>
<td>ALARM - Gas Detected - #</td>
</tr>
<tr>
<td>152 Refrigeration</td>
<td>ALARM - Refrigeration - #</td>
</tr>
<tr>
<td>153 Loss of heat</td>
<td>ALARM - Heating System - #</td>
</tr>
<tr>
<td>154 Water leakage</td>
<td>ALARM - Water Leakage - #</td>
</tr>
<tr>
<td>155 Foil break</td>
<td>ALARM - Foil Break - #</td>
</tr>
<tr>
<td>156 Day trouble</td>
<td>ALARM - Day Zone - #</td>
</tr>
<tr>
<td>157 Low bottled gas level</td>
<td>ALARM - Low Gas Level - #</td>
</tr>
<tr>
<td>158 High Temp</td>
<td>ALARM - High Temperature - #</td>
</tr>
<tr>
<td>159 Low Temp</td>
<td>ALARM - Low Temperature - #</td>
</tr>
<tr>
<td>161 Loss of air flow</td>
<td>ALARM - Air Flow - #</td>
</tr>
</tbody>
</table>

#### Fire Supervisory - 200 and 210

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 Fire supervisory</td>
<td>SUPER. - Fire Supervisory - #</td>
</tr>
<tr>
<td>201 Low water pressure</td>
<td>SUPER. - Low Water Pressure - #</td>
</tr>
<tr>
<td>202 Low CO2</td>
<td>SUPER. - Low CO2</td>
</tr>
<tr>
<td>203 Gate valve sensor</td>
<td>SUPER. - Gate Valve - #</td>
</tr>
<tr>
<td>204 Low water level</td>
<td>SUPER. - Low Water Level - #</td>
</tr>
<tr>
<td>205 Pump activated</td>
<td>SUPER. - Pump Activation - #</td>
</tr>
<tr>
<td>206 Pump failure</td>
<td>SUPER. - Pump Failure - #</td>
</tr>
</tbody>
</table>

#### System Troubles - 300 and 310

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 System trouble</td>
<td>TROUBLE - System Trouble</td>
</tr>
<tr>
<td>301 AC loss</td>
<td>TROUBLE - AC Power</td>
</tr>
<tr>
<td>302 Low system battery</td>
<td>TROUBLE - System Low Battery</td>
</tr>
<tr>
<td>303 RAM checksum bad</td>
<td>TROUBLE - RAM Checksum (restore not applicable)</td>
</tr>
<tr>
<td>304 ROM checksum bad</td>
<td>TROUBLE - ROM Checksum (restore not applicable)</td>
</tr>
<tr>
<td>305 System reset</td>
<td>TROUBLE - System Reset (restore not applicable)</td>
</tr>
<tr>
<td>306 Panel program changed</td>
<td>TROUBLE - Prog. Change (restore not applicable)</td>
</tr>
<tr>
<td>307 Self-test failure</td>
<td>TROUBLE - Self Test Failure</td>
</tr>
<tr>
<td>308 System shutdown</td>
<td>TROUBLE - System Shutdown</td>
</tr>
<tr>
<td>309 Battery test failure</td>
<td>TROUBLE - Battery Test Failure</td>
</tr>
<tr>
<td>310 Ground fault</td>
<td>TROUBLE - Ground Fault - #</td>
</tr>
<tr>
<td>311 No battery</td>
<td>TROUBLE - No Battery</td>
</tr>
</tbody>
</table>

#### Sounder/Relay Troubles - 320

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 Sounder/Relay</td>
<td>TROUBLE - Sounder/Relay - #</td>
</tr>
<tr>
<td>321 Bell 1</td>
<td>TROUBLE - Bell/Siren #1</td>
</tr>
<tr>
<td>322 Bell 2</td>
<td>TROUBLE - Bell/Siren #2</td>
</tr>
<tr>
<td>323 Alarm relay</td>
<td>TROUBLE - Alarm Relay</td>
</tr>
<tr>
<td>324 Trouble relay</td>
<td>TROUBLE - Trouble Relay</td>
</tr>
<tr>
<td>325 Reversing relay</td>
<td>TROUBLE - Reversing Relay</td>
</tr>
<tr>
<td>326 Bell 3</td>
<td>TROUBLE - Bell/Siren #3</td>
</tr>
<tr>
<td>327 Bell 4</td>
<td>TROUBLE - Bell/Siren #4</td>
</tr>
</tbody>
</table>

#### System Peripheral Troubles - 330 and 340

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>330 System peripheral</td>
<td>TROUBLE - Sys. Peripheral - #</td>
</tr>
<tr>
<td>331 Polling loop open</td>
<td>TROUBLE - Polling Loop Open</td>
</tr>
<tr>
<td>332 Polling loop short</td>
<td>TROUBLE - Polling Loop Short</td>
</tr>
<tr>
<td>333 Expansion module failure</td>
<td>TROUBLE - Expansion Module Failure - #</td>
</tr>
<tr>
<td>334 Repeater Failure</td>
<td>TROUBLE - Repeater Failure - #</td>
</tr>
<tr>
<td>335 Local printer paper out</td>
<td>TROUBLE - Printer Paper Out</td>
</tr>
<tr>
<td>336 Local printer failure</td>
<td>TROUBLE - Local Printer</td>
</tr>
<tr>
<td>EVENT</td>
<td>MESSAGE</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Communication Troubles - 350 and 360</strong></td>
<td></td>
</tr>
<tr>
<td>350 Communication</td>
<td>TROUBLE - Communication Trouble</td>
</tr>
<tr>
<td>351 Telco 1 fault</td>
<td>TROUBLE - Phone Line #1</td>
</tr>
<tr>
<td>352 Telco 2 fault</td>
<td>TROUBLE - Phone Line #2</td>
</tr>
<tr>
<td>353 Long range radio transmitter fault</td>
<td>TROUBLE - Radio Transmitter</td>
</tr>
<tr>
<td>354 Fail to communicate</td>
<td>TROUBLE - Fail to Communicate</td>
</tr>
<tr>
<td>355 Loss of radio supervision</td>
<td>TROUBLE - Radio Supervision</td>
</tr>
<tr>
<td>356 Loss of central polling</td>
<td>TROUBLE - Central Radio Polling</td>
</tr>
<tr>
<td><strong>Protection Loop Troubles - 370</strong></td>
<td></td>
</tr>
<tr>
<td>370 Protection loop</td>
<td>TROUBLE - Protection Loop - #</td>
</tr>
<tr>
<td>371 Protection loop open</td>
<td>TROUBLE - Protection Loop Open - #</td>
</tr>
<tr>
<td>372 Protection loop short</td>
<td>TROUBLE - Protection Loop Short - #</td>
</tr>
<tr>
<td>373 Fire trouble</td>
<td>TROUBLE - Fire Loop - #</td>
</tr>
<tr>
<td><strong>Sensor Troubles - 380</strong></td>
<td></td>
</tr>
<tr>
<td>380 Sensor trouble</td>
<td>TROUBLE - Sensor Trouble - #</td>
</tr>
<tr>
<td>381 Loss of supervision - RF</td>
<td>TROUBLE - RF Sensor Supervision - #</td>
</tr>
<tr>
<td>382 Loss of supervision - RPM</td>
<td>TROUBLE - RPM Sensor Supervision - #</td>
</tr>
<tr>
<td>383 Sensor tamper</td>
<td>TROUBLE - Sensor Tamper - #</td>
</tr>
<tr>
<td>384 RF transmitter low battery</td>
<td>TROUBLE - RF Sensor Batt. - #</td>
</tr>
<tr>
<td><strong>Open/Close - 400</strong></td>
<td></td>
</tr>
<tr>
<td>400 Open/Close</td>
<td>OPENING</td>
</tr>
<tr>
<td>401 Open/Close by user</td>
<td>OPENING - User #</td>
</tr>
<tr>
<td>402 Group Open/Close</td>
<td>OPENING - Group User #</td>
</tr>
<tr>
<td>403 Automatic Open/Close</td>
<td>OPENING - Automatic</td>
</tr>
<tr>
<td>404 Late Open/Close</td>
<td>OPENING - Late</td>
</tr>
<tr>
<td>405 Deferred Open/Close</td>
<td>Opening not used</td>
</tr>
<tr>
<td>406 Cancel</td>
<td>OPENING - Cancel</td>
</tr>
<tr>
<td>407 Remote arm/disarm</td>
<td>OPENING - Remote</td>
</tr>
<tr>
<td>408 Quick arm</td>
<td>Opening not applicable</td>
</tr>
<tr>
<td>409 Keyswitch Open/Close</td>
<td>OPENING - Keyswitch</td>
</tr>
<tr>
<td><strong>Remote Access - 410</strong></td>
<td></td>
</tr>
<tr>
<td>411 Callback request made</td>
<td>REMOTE - Callback Requested (restore not applicable)</td>
</tr>
<tr>
<td>412 Success - download/access</td>
<td>REMOTE - Successful Access (restore not applicable)</td>
</tr>
<tr>
<td>413 Unsuccessful access</td>
<td>REMOTE - Unsuccessful Access (restore not applicable)</td>
</tr>
<tr>
<td>414 System shutdown</td>
<td>REMOTE - System Shutdown</td>
</tr>
<tr>
<td>415 Dialer shutdown</td>
<td>REMOTE - Dialer Shutdown</td>
</tr>
<tr>
<td>416 Success - upload/access</td>
<td>REMOTE - Successful Access (restore not applicable)</td>
</tr>
<tr>
<td><strong>Access Control - 420</strong></td>
<td></td>
</tr>
<tr>
<td>421 Access denied</td>
<td>ACCESS - Access Denied - User # (restore not used)</td>
</tr>
<tr>
<td>422 Access report by user</td>
<td>ACCESS - Access Granted - User # (restore not used)</td>
</tr>
<tr>
<td><strong>Sounder/Relay Disables - 520</strong></td>
<td></td>
</tr>
<tr>
<td>520 Sounder/Relay disable</td>
<td>DISABLE - Sounder/Relay - #</td>
</tr>
<tr>
<td>521 Bell 1 disable</td>
<td>DISABLE - Bell/Siren - #1</td>
</tr>
<tr>
<td>522 Bell 2 disable</td>
<td>DISABLE - Bell/Siren - #2</td>
</tr>
<tr>
<td>523 Alarm relay disable</td>
<td>DISABLE - Alarm Relay</td>
</tr>
<tr>
<td>524 Trouble relay disable</td>
<td>DISABLE - Trouble Relay</td>
</tr>
<tr>
<td>525 Reversing relay disable</td>
<td>DISABLE - Reversing Relay</td>
</tr>
<tr>
<td>526 Bell 3 disable</td>
<td>DISABLE - Bell/Siren - #3</td>
</tr>
<tr>
<td>EVENT</td>
<td>MESSAGE</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>527 Bell 4 disable</td>
<td>DISABLE - Bell/Siren - #4</td>
</tr>
</tbody>
</table>

**System Peripheral Disables - 530 and 540**

**Communication Disables - 550 and 560**

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>551 Dialer disabled</td>
<td>DISABLE - Dialer Disable</td>
</tr>
<tr>
<td>552 Radio transmitter disabled</td>
<td>DISABLE - Radio Disable</td>
</tr>
</tbody>
</table>

**Bypasses - 570**

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>570 Zone bypass</td>
<td>BYPASS - Zone Bypass - #</td>
</tr>
<tr>
<td>571 Fire bypass</td>
<td>BYPASS - Fire Bypass - #</td>
</tr>
<tr>
<td>572 24-Hour zone bypass</td>
<td>BYPASS - 24-Hour Bypass - #</td>
</tr>
<tr>
<td>573 Burglar bypass</td>
<td>BYPASS - Burg. Bypass - #</td>
</tr>
<tr>
<td>574 Group bypass</td>
<td>BYPASS - Group Bypass - #</td>
</tr>
</tbody>
</table>

**Test Misc. - 600**

<table>
<thead>
<tr>
<th>EVENT</th>
<th>MESSAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>601 Manual trigger test</td>
<td>TEST - Manually Triggered (restore not applicable)</td>
</tr>
<tr>
<td>602 Periodic test report</td>
<td>TEST - Periodic (restore not applicable)</td>
</tr>
<tr>
<td>603 Periodic RF transmission</td>
<td>TEST - Periodic Radio (restore not applicable)</td>
</tr>
<tr>
<td>604 Fire test</td>
<td>TEST - Fire Test (restore not used)</td>
</tr>
<tr>
<td>605 Status report to follow</td>
<td>STATUS - Status Follows (restore not applicable)</td>
</tr>
<tr>
<td>606 Listen-in to follow</td>
<td>LISTEN - Listen-in Active (restore not applicable)</td>
</tr>
<tr>
<td>607 Walk test mode</td>
<td>TEST - Walk Test Mode</td>
</tr>
<tr>
<td>608 System abnormal test</td>
<td>TEST - System Abnormal Test</td>
</tr>
</tbody>
</table>
Appendix G: NFPA Requirements

The following is the minimum configuration to meet the NFPA requirements.

<table>
<thead>
<tr>
<th>Module</th>
<th>Local</th>
<th>Aux</th>
<th>RS</th>
<th>CS</th>
<th>Proprietary</th>
<th>Process Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES-50X</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ES-50XC</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>IPOTS-COM (pre-installed communicator)</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4XTMF</td>
<td>O</td>
<td>Y</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>DP-ES-R</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>BB-55F 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>ANN-LED 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Y</td>
</tr>
<tr>
<td>ANN-80 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Y</td>
</tr>
<tr>
<td>ANN-S/PG 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Y</td>
</tr>
<tr>
<td>ANN-I/O 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Y</td>
</tr>
<tr>
<td>ANN-RLED 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Y</td>
</tr>
<tr>
<td>ANN-RLY 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>Y</td>
</tr>
</tbody>
</table>

Where Y = Yes, N = No, and O = Optional

1  Non-Emergency
2  One of the indicated modules is required when the IPOTS-COM is not employed.
3  Listed separately
Appendix H: Open/Short/Ground Trip Values

Table H.1 lists the earth fault resistance detection for each applicable terminal on the FACP.

<table>
<thead>
<tr>
<th>Output Circuit</th>
<th>Terminal</th>
<th>Trip Resistance (in ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Sync</td>
<td>+</td>
<td>360K</td>
</tr>
<tr>
<td>Remote Sync</td>
<td>-</td>
<td>330K</td>
</tr>
<tr>
<td>NAC 1-2</td>
<td>+</td>
<td>360K</td>
</tr>
<tr>
<td>NAC 1-2</td>
<td>-</td>
<td>320K</td>
</tr>
<tr>
<td>ANN Bus</td>
<td>A</td>
<td>270K</td>
</tr>
<tr>
<td>ANN Bus</td>
<td>B</td>
<td>265K</td>
</tr>
<tr>
<td>Aux Power</td>
<td>+</td>
<td>370K</td>
</tr>
<tr>
<td>Aux Power</td>
<td>-</td>
<td>320K</td>
</tr>
<tr>
<td>SLC</td>
<td>+</td>
<td>125K</td>
</tr>
<tr>
<td>SLC</td>
<td>-</td>
<td>320K</td>
</tr>
</tbody>
</table>

Table H.1  Earth Fault Trip Values

Table H.2 lists the open/short trip values and restoral values for the NAC circuits on the FACP.

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Trip Resistance (in ohms)</th>
<th>Restore Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAC 1-2</td>
<td>Shorts below 1.75K</td>
<td>2K</td>
</tr>
<tr>
<td>NAC 1-2</td>
<td>Opens above 25K</td>
<td>23K</td>
</tr>
</tbody>
</table>

Table H.2  NAC Open/Short Trip Values
Appendix I: Canadian Application

- The ES-50XC is supplied standard with the DP-ES-R Dress Panel for Canadian applications.
- When installing and programming the FACP, the Canadian Option must be set to **ON** prior to any other panel programming (refer to “Canadian Option” on page 77 of the Programming Section of this manual).
- At least one ANN-LED must be installed adjacent to the FACP as it is part of the primary operator interface. Wiring to the ANN-LED must be in metal conduit and must be connected to the FACP’s Primary ANN-BUS.
- If remote indicators are desired, they must be connected to the Secondary ANN-BUS circuit.
- The installer must write in the *Date of Final Assembly* on the Master Marking and Warranty Label located on the FACP backbox door.
- Positive Alarm Sequence (PAS), the Pre-Signal option, and the Auto-Silence option, are not available for Canadian applications.
- The F1 function key is automatically configured to perform a manual alarm signal activation when pressed.
- The F2 function key is automatically configured to perform a two-stage bypass when pressed which advances NAC coding directly to the second stage alarm.
- The F3 function key is automatically configured to perform an automatic alarm signal cancel in two-stage NAC operation. This prevents the NAC from advancing to the second stage alarm.
- If NACs are set up for two-stage operation, the Silence Inhibit timer is automatically enabled and is fixed at 5 minutes.
- AlarmNet supervision settings for panels communicating by Cellular-only and Ethernet-only communications are fixed at 3 minutes and cannot be changed regardless of programming selection.

![Diagram of FACP Minimum Configuration - Single ANN-LED](es50c-annled.wm)
Figure I.2  FACP Maximum Configuration - Five ANN-LED Annunciators

Secondary ANN-BUS (data on connector TB10, power on TB11 Terminals 5&6 with power programmed as non-resettable)

Primary ANN-BUS (data on connector TB9, non-resettable power on TB11 Terminals 1&2) in metal conduit (adjacent to FACP)
Notes:
1. The CRF-300 and the MMF-300 must be mapped to the same zone which is programmed for supervisory operation.
2. No other device can be mapped to that supervisory zone.
3. Wire gauge must be 18AWG minimum.

*If the SLC device does not match the one in this figure, refer to the SLC manual appendix, which contains wiring conversion charts for type V and type H modules.

Figure I.3 Alternate Transmission for Supervisory Signals
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  IP settings 80

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  local programming 48
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earth ground 24
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Z048 67
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zone setup 66
maintenance level 102
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disabled 67
enabled 67
installed 67
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Slide-in Labels

Carefully cut along the outside of each label. Identify Function (F1-F4) keys as desired and slide the labels into the keypad. Starting at the center of the keypad next to the Function Keys, slide each label into the groove towards the outer edge. Function Keys F1 and F3 are not programmable in Canadian applications. Those keys must use the pre-printed labels below.

![Slide-in Labels](image)

**Figure 1.1 Slide-in Labels for Canadian Applications**
ES-50X and ES-50XC Fire Alarm Control Panels Operating Instructions

NORMAL - Only AC POWER is illuminated green. All other indicators are off. LCD display will read SYSTEM NORMAL.

PANEL KEY - The key to open the panel can be found at the following location:

________________________________________________________________________

WHEN AUDIBLE DEVICES ARE SOUNING -

FOR AN ALARM

1. Evacuate the protected area

2. Notify the monitoring service and/or the Fire Department immediately. Tell them briefly what happened and what your current status is.

   Phones: ____________________________ ____________________________

   Fire Department Monitoring Service

3. If the Fire Department is responding, be prepared to provide directions to arriving firefighters.

FOR TROUBLE, SUPERVISORY, AND EMERGENCY ALARMS

1. Notify the monitoring service and/or applicable first responders if this panel is connected to either one, and tell them what is happening.

2. Silence audible devices by unlocking and opening the panel and pressing the ACKNOWLEDGE/STEP button. The applicable indicator will remain illuminated. Contact authorized service personnel immediately! (See Below).

WARNING!
DO NOT ALLOW TROUBLE CONDITIONS TO REMAIN LOGGED IN THE SYSTEM. THE PROTECTION THE SYSTEM OFFERS HAS BEEN COMPROMISED OR ELIMINATED, WHEN A TROUBLE CONDITION EXISTS.

To return to normal after an alarm
1. Do not enter the protected area until safe to do so.
2. Clear all initiating devices. Smoke detectors will not reset if there is still smoke in the area.
3. Reset the control panel (PRESS the RESET button)

Power failure or brownout
If AC power drops too low or fails, AC POWER indicator will extinguish, the system TROUBLE indicator will turn on yellow, and the panel buzzer and any other audible trouble devices will sound. Contact authorized service personnel immediately. See below.

Manual activation (Fire Drill or otherwise)
Notification Appliance Circuits (NACs) can be activated by pressing and holding the DRILL button for at least two seconds.

NOTE: You may want to disconnect the municipal box by sliding the DISCONNECT switch, located on the 4XTMF module, to its disconnect position (to the right). If a DACT is connected, notify the monitoring service before conducting any fire drills or tests.

Alarm Silencing
Notification Appliance Circuits may be silenced by pressing the ALARM SILENCE button. ALARM SILENCED will turn on yellow. Subsequent alarms will reactivate circuits. Press the RESET button to clear the “silenced” condition.

NOTE: Notification Appliance Circuits may be programmed as nonsilenceable. Also, Signal Silence Inhibit, if enabled, will prevent silencing of NACs for five minutes after an alarm (see manual).

To test the indicators, LCD display and piezo
Press and release the RESET button and check all indicators/LEDs. Every indicator/LED should be on, LCD shows all pixels on, piezo sounder beeps.

For more information, refer to the ES-50X Series Manual, Document #LS10129-000FL-E. It is kept in the following location:

________________________________________________________________________

THIS SHEET SHALL BE FRAMED ADJACENT TO THE CONTROL PANEL

________________________________________________________________________

Cut along dotted line.
Manufacturer Warranties and Limitation of Liability

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